

## Appointment

---

**From:** Bailey, Ethel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9B33DD651FA04119BE02B7B6B151FF91-BAILEY, ETHEL]  
**Sent:** 5/4/2017 3:23:47 PM  
**To:** Starfield, Lawrence [Starfield.Lawrence@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Tejada, Matthew [Tejada.Matthew@epa.gov]; Lee, Charles [Lee.Charles@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]; Badalamente, Mark [Badalamente.Mark@epa.gov]  
**CC:** Inge, Carolyn [Inge.Carolyn@epa.gov]; Wallace, Maria [wallace.maria@epa.gov]; Wingo-Huntley, Deloris [Wingo-Huntley.Deloris@epa.gov]  
**Subject:** Briefing on Environmental Justice w/Samantha Dravis  
**Location:** 3500 WJC-North  
**Start:** 5/8/2017 2:15:00 PM  
**End:** 5/8/2017 2:45:00 PM  
**Show Time As:** Busy

**From:** Lovell, Will (William) [lovell.william@epa.gov]  
**Sent:** 7/20/2017 5:12:01 PM  
**To:** Lovell, Will (William) [lovell.william@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** REMINDER: FY 2017 MANDATORY TRAINING Sessions Must be Completed by September 30, 2017 - Get These Done Now!  
**Attachments:** AO's List of New Employee Mandatory Training - 7-20-2017.docx  
**Start:** 8/15/2017 9:00:00 PM  
**End:** 8/15/2017 9:30:00 PM  
**Show Time As:** Busy

## IMPORTANT REMINDER

*Please Make it a Priority to  
Get These Completed Well in Advance of the Deadline*

**Online Mandatory Training Must be Completed by AO Career and Non-Career Employees,  
Contractors, and Grantees (including SEE Grantees)  
by September 30, 2017**

It is a new year and we can and should all be in compliance with the Agency's timeframe. The deadline to complete online mandatory training is 'just' some 70 calendar days away! Let's avoid the late rush that happened last year when many people were pressed to find the time to complete the courses on time.

**Good News! All of the EPA 2017 Mandatory Training courses are now available.** Everyone, including career and non-career current employees, contractors and grantees will find the courses at their "View Learning Plan & Mandatory Training" section on the [EPA eLearning site](#). Please keep in mind that YOUR user name and password are required to access the EPA eLearning site.

- **For Everyone's Convenience:** All FY 2017 mandatory courses, including those for new employees are also listed on the EPA University SharePoint site: <http://workplace.epa.gov/training.html>
- **IMPORTANT INFO for EPA's New Employees:** New employees will receive a *Welcome to EPA* eLearning email containing instructions for accessing training courses in the EPA eLearning site within two weeks of their employment. New employees are required to complete specific courses within their first 90 calendar days of employment. Otherwise, all courses are to be completed within 6 months. (See Attachment).
- **ATTENTION: New and Existing Agency Contractors and SEE Grantees with an EPA e-mail Account:** There are just a few specific courses you are assigned to take during FY 2017, including the Information Security Awareness Training and the Domestic Violence training. The annual Records Management

training is required for those Contractors who are required to complete it based on the specific contract language.

If you have any questions or need additional assistance, please contact me.

Regards!

**Brian M. Twillman, MS-ABS - Training Coordinator and Organization Development Specialist**

**"Service First, People Always."** US EPA | Office of the Administrator | Office of Administrative and Executive Services (OAES)

WJC North | Rm 2432-Y | Mail-Code 1104-A 1200 Pennsylvania Avenue, NW, WDC 20460 202.564.5948 phone | 202.564.2744 fax | 202.380.7983

EPA iPhone

EPA eLearning: <http://epa.skillport.com/> EPA University's List of Mandatory Training: <http://workplace.epa.gov/training.html>

[AO Sharepoint Site](#)

**"Live so that when others think of compassion, honesty and integrity, they think of you..." – Unknown**

**Brian M. Twillman, MS-ABS - Training Coordinator and Organization Development Specialist**

**"Service First, People Always."** US EPA | Office of the Administrator | Office of Administrative and Executive Services (OAES)

WJC North | Rm 2432-Y | Mail-Code 1104-A 1200 Pennsylvania Avenue, NW, WDC 20460 202.564.5948 phone | 202.564.2744 fax | 202.380.7983

EPA iPhone

EPA eLearning: <http://epa.skillport.com/>

EPA University's List of Mandatory Training: <http://workplace.epa.gov/training.html>

[AO Sharepoint Site](#)

**"Live so that when others think of compassion, honesty and integrity, they think of you..." – Unknown**

**"Life is perpetual instruction in cause and effect." – Ralph Waldo Emerson**

## AO's List of EPA NEW EMPLOYEE MANDATORY TRAINING

Updated: July 20, 2017

**\*\* NOTE: These sessions are Mandatory for All EPA employees (including Pathways Students) during FY 2017. (Everyone must complete these by 9/30/2017)**

Course Title	Description	Links/Website/Resource Info	Duration	Date Completed
<b>ASAP - Immediately Upon Hire in order to Have and Retain Access to EPA's LAN</b>				
<b>**FY 17 Information Security Awareness</b>	Covers the key practices and policies that are mandatory for all EPA computer users.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID: _scorm12_epa_isat_fy17_fg_enus	45-60 minutes	
<b>Prior to Participating in Episodic, Regular or Medical Telework</b>				
<b>Telework 101 for Employees (for Eligible Personnel)</b>	Provides an overview of the EPA telework program along with strategies and suggestions on how to successfully telework.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful link: <a href="https://www.telework.gov/training-resources/">https://www.telework.gov/training-resources/</a> Library ID: ID: _scorm12_epa_tte_01	60 minutes	
<b>Telework 101 for Managers</b>	Provides an overview of the EPA telework program along with strategies and suggestions for being successful.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful link: <a href="https://www.telework.gov/training-resources/">https://www.telework.gov/training-resources/</a>	60 minutes	
<b>First 90 Calendar Days of Employment</b>				
<b>**2017 Continuity of Operations (COOP) Awareness</b>	COOP is a Federal Initiative that enables all Executive Branch departments and agencies to continue to perform essential functions during an emergency.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful link: <a href="http://intranet.epa.gov/oeminttra/coop_training.htm">http://intranet.epa.gov/oeminttra/coop_training.htm</a> Library ID: ID: _scorm12_epa_2016_coop_fg_enus	30 minutes	
<b>Anti-Harassment Procedures</b>	Covers the procedures outlined in EPA Order 4711 for reporting and responding to allegations of harassment within the EPA workplace.	EPA eLearning: <a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID: _scorm12_epa_anti_harassment_2_0_2016_fg_enus	30 minutes	
<b>Essential Ethics for New Employees</b>	Presents many essential ethics concepts, laws and regulations. When you have an ethics question, you should contact your Deputy Ethics Official (DEO) or the Assistant Deputy Ethics Official (ADEO).	EPA eLearning: <a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful link: <a href="http://intranet.epa.gov/ogc/2016ethicstraining/10.html">http://intranet.epa.gov/ogc/2016ethicstraining/10.html</a> Library ID: ID: elo_epaethics	30 minutes	
<b>**Freedom of Information Act (FOIA) Awareness Training</b>	Provides an overview of FOIA and how to meet obligations for processing FOIA requests, while also encouraging employees to become familiar with the guidelines and resources held by EPA's FOIA Office.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful Link: <a href="http://intranet.epa.gov/foia/">http://intranet.epa.gov/foia/</a> Library ID: ID: _s24_epa_foia_training_2017	30 minutes	



<b>**FY 2017 Annual Records Management</b>	This is the Agency-wide mandatory Annual Records Management Training Course.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID_scorm12_epa_annualrecmgmt_fy17_fg_enus	30 minutes	
<b>No FEAR Act</b>	The purpose of this training is to educate those who work in federal agencies about the importance of being accountable for violations of antidiscrimination and whistleblower protection laws.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful Link: <a href="http://intranet.epa.gov/foia/">http://intranet.epa.gov/foia/</a> Library ID: ID: fgov_01_a33_lc_enus	30 minutes	
<b>U. S. Constitution</b>	Covers the U. S. Constitution and what it means for federal employees. Note-this course must be accessed from within the EPA firewall.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful link: <a href="http://constitutionday.cpmc.osd.mil/">http://constitutionday.cpmc.osd.mil/</a> Library ID: ID: elo_usc	30 minutes	
<b>Workplace Safety</b>	Addresses the Agency and employee responsibilities, key reporting requirements and Whistleblower protection provisions enforced by OSHA.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful Link: <a href="http://intranet.epa.gov/ssd/safety/">http://intranet.epa.gov/ssd/safety/</a>	30 minutes	
<b>First 6 Months of Employment</b>				
<b>**Domestic Violence</b>	Defines domestic violence, covers ways to recognize signs of domestic violence in the workplace, and identifies appropriate ways to respond if someone's work has declined due to domestic violence.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID: fgov_01_a36_lc_enus	30 minutes	
<b>EJ 101: Introduction to Environmental Justice</b>	Provides a basic but informative overview of environmental justice.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID: _scorm12_epa_ej_101	45-60 minutes	
<b>Environmental Management Systems (EMS) at EPA</b>	This training covers the goals and objectives for EMS along with the roles and responsibilities of employees.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID: _scorm12_epa_ems_oarm_2015	15-20 minutes	
<b>EPA Climate Change Adaptation</b>	Enables EPA employees to more effectively do their job as the climate changes.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: _scorm12_epa_climatechange_fy17_fg_enus	35-45 minutes	
<b>Safety and Health Management (SHMS) General Awareness</b>	After completing this course, you will be familiar with the Safety and Health Management System (SHMS) and understand how SHMS relates to your job.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Helpful Link: <a href="http://intranet.epa.gov/hqhs/safety/shms.htm">http://intranet.epa.gov/hqhs/safety/shms.htm</a>	20-30 minutes	
<b>An Introduction to EPA's Scientific Integrity Policy</b>	Covers the basics of EPA's Scientific Integrity Policy for all employees.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a>	30 minutes	
<b>**Working Effectively with Tribal Governments</b>	Provides employees with the foundational information needed to understand the Agency's unique relationship with federally recognized tribes.	<a href="https://epa.skillport.com/skillportfe/login.action">https://epa.skillport.com/skillportfe/login.action</a> Library ID: ID: _scorm12_epa_wetg_2017_fg_enus\ Helpful Link: <a href="http://intranet.epa.gov/oita/">http://intranet.epa.gov/oita/</a>	30-45 minutes	



## Appointment

---

**From:** Bailey, Ethel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9B33DD651FA04119BE02B7B6B151FF91-BAILEY, ETHEL]  
**Sent:** 5/4/2017 3:23:47 PM  
**To:** Starfield, Lawrence [Starfield.Lawrence@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Tejada, Matthew [Tejada.Matthew@epa.gov]; Lee, Charles [Lee.Charles@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]; Badalamente, Mark [Badalamente.Mark@epa.gov]  
**CC:** Inge, Carolyn [Inge.Carolyn@epa.gov]; Wallace, Maria [wallace.maria@epa.gov]; Wingo-Huntley, Deloris [Wingo-Huntley.Deloris@epa.gov]  
**Subject:** Briefing on Environmental Justice w/Samantha Dravis  
**Attachments:** EJ Presentation 5-3-17.pptx  
**Location:** 3500 WJC-North  
**Start:** 5/8/2017 2:15:00 PM  
**End:** 5/8/2017 2:45:00 PM  
**Show Time As:** Busy

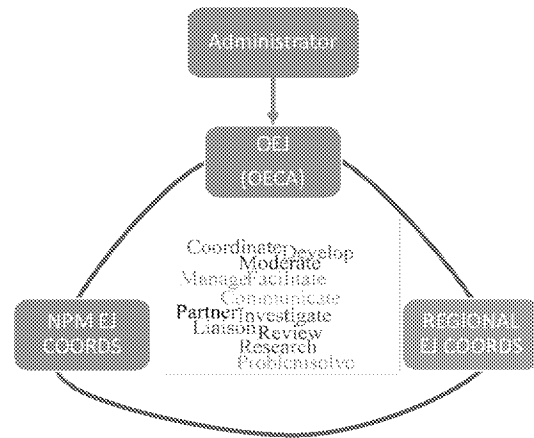


## The Office of Environmental Justice (OEJ)

- Housed within OECA (because of multimedia focus, EJ has no enforcement component)
- Coordination across EPA & federal agencies, Community Support, NEJAC, EJ IWG

### EJ throughout the Agency

- Responsibility of every program and region to integrate EJ
- Lead and coordinated by OECA/OEJ
- Multi-year strategic plans



## Approach to EJ at EPA

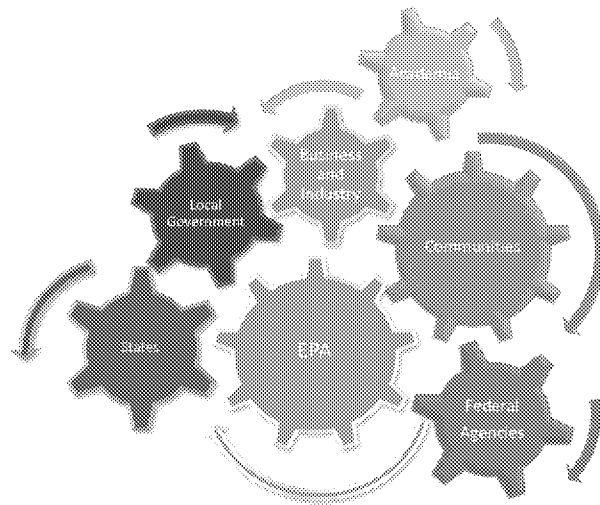
Partnership woven throughout all that we do

Special focus on working with states on EJ

Collaborative and creative approach for protection from environmental and health hazards for our most vulnerable communities

Holistic solutions to challenging problems

Equal access to the decision-making process to have a healthy environment in which to live, work, play, pray and go to school

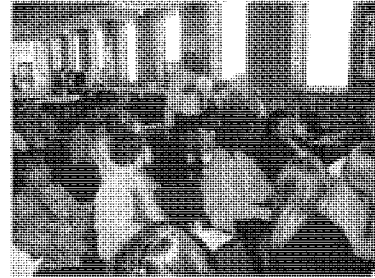


**OEJ Community Support:**

Protecting public health and the environment by working directly with vulnerable communities

Supporting **local collaborations, especially with states**, and linking them with **government resources and programs** nationally.

- EJ Small Grants
- EJ Collaborative Problem Solving
- Technical assistance for capacity building and engagement for communities



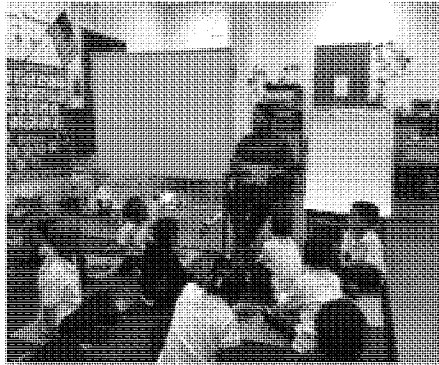
Need: (1) resumption of State/Tribal EJ Cooperative Agreements (STEJCA) grant program (2) Community Revitalization Strategy



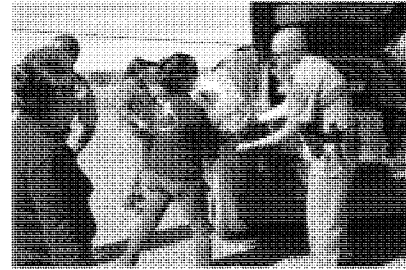
## Community Support @ Work



*Community Storm-water  
Management and Revitalization  
Program – New Orleans*



*Coalition to End Childhood Lead Poisoning -  
Baltimore*



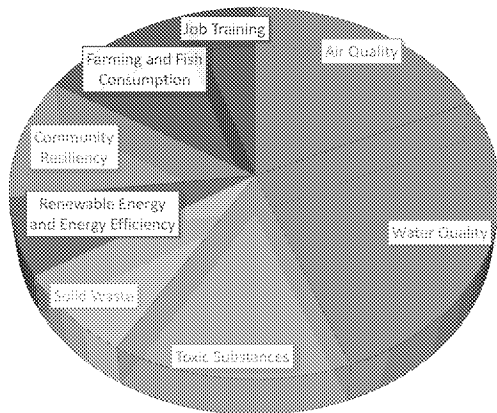
*Uranium contamination and creating an  
action plan to access and develop alternative  
clean water sources in Navajo Nation*





## EJ Grants Since 1994

### FOCUS OF GRANT PROJECTS 2013 - 2016



#### A few EJ Grant Facts:

- ☐ More than \$24 million EJ small grants awarded
- ☐ Over 1400 community-based projects
- ☐ Collaborative Problem-Solving Program (Began in 2003)
- ☐ More than \$4 million CPS grants awarded
- ☐ Over 40 community-based projects funded



| National Environmental Justice  
Advisory Council (NEJAC)

- **Structure:** 29 members from community, NGO, business and industry, academia, tribes, state and local government
- Minneapolis, April 25-27 with focus on working with states
- New members this summer: 1 community, 1 NGO, 2 Biz&Ind (EPA Administrator selects)



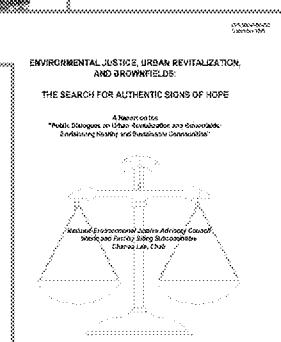
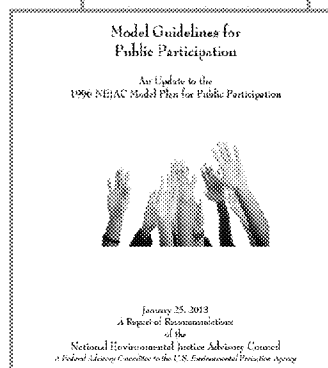
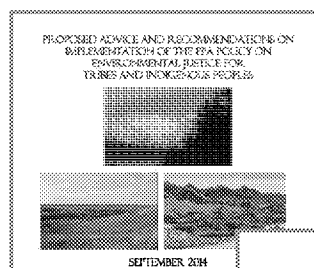
Need: EPA Administrator meeting with NEJAC Leadership



# NEJAC @ Work

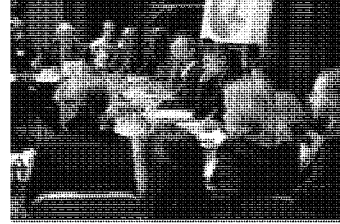
## Significant Outcomes and Impacts of NEJAC:

- ☐ Brownfields, Equitable Development and Revitalization
- ☐ Guide to Meaningful Public Participation
- ☐ Expanding Community Capacity for Problem-Solving
- ☐ Strengthening the Resiliency of Industrial Waterfront Communities
- ☐ Improving Relationships with Tribal Governments and Indigenous Peoples
- ☐ Improving Emergency Preparedness, Prevention, and Response



| Federal Interagency Working Group on  
| Environmental Justice (EJ IWG)

- Chaired by EPA Administrator
- Ongoing since its creation by EO 12898 in 1994
- Key focus areas: Leveraging resources for capacity building and economic investments in minority, low-income, rural, indigenous and tribal communities.



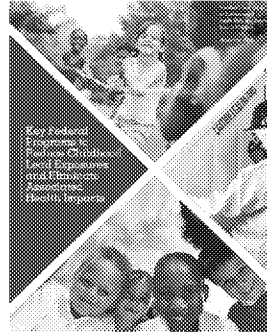
Need: (1) Administrator level meeting of IWG, (2) Action on immediate opportunities to use IWG to make a difference in communities, especially with infrastructure and economic revitalization



## Strategic Opportunities for Advancing EJ

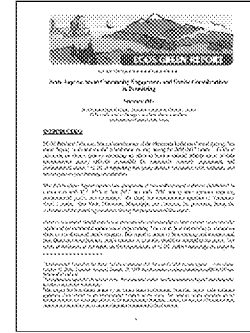
Every program and region in EPA has a responsibility for advancing EJ

1. EJ Partnerships, with emphasis on working with states, to make a difference in communities
2. Measurable progress on significant issues (see next slide)
3. Progress on integration of EJ consideration throughout EPA



Federal lead initiative

Needs: (1) Meet with ECOS leadership on EJ, (2) provide national leadership on reducing lead exposure in underserved communities



ECOS-EPA collaborations  
(Green Report on EJ and permitting, ECOS EJ community of practice, NEJAC meeting)



## Measurable Results

Challenge	Measure of Success
Blood Lead Level Disparities	Reduce the difference in blood lead levels between low income and non-low income children.
Small Water Systems	Reduce the number and % of small water systems with repeat health violations of key contaminants.
Tribal Drinking Water	Increase percentage of Indian country population served by community water systems.
Fine Particulate Air Pollution	Increase attainment of PM2.5 standards in counties with high percentage of low income populations.
Hazardous Waste Sites	Reduce human exposure to contamination at hazardous waste sites with overburdened vulnerable communities.



## | EJ is separate from Title VI of Civil Rights Act

- Title VI provides a right of action against states if EPA finds disproportionate impact. Responsibilities under Title VI are overseen by OGC's External Civil Rights Compliance Office
- Environmental Justice provides no independent right of action under the law, although EJ is sometimes mistakenly used as a shorthand for complaints alleging lack of notification, public participation, consideration of impacts, mitigation, etc. mandated under various statutes.
- EJ can help prevent and/or resolve potential civil rights complaints by helping to address community issues through the sharing of best practices, lessons learned, approaches and tools.



## | Key Opportunities

1. Meet with NEJAC leadership this summer in DC
2. Convene a cabinet level meeting of IWG to focus on immediate opportunities to help communities with infrastructure and economic revitalization
3. Meet with ECOS leadership on EJ and equity goals for states
4. Schedule visits to key EJ communities to elevate successes
5. Convene the Presidential Task Force on Lead and Children's Health





## Appointment

---

**From:** Plotkin, Viktoriya [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=80EE212AFBC149048915720F0CC24116-PLOTKIN, VIKTORIYA]  
**Sent:** 5/2/2017 10:36:17 PM  
**To:** Kavlock, Robert [Kavlock.Robert@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Hauchman, Fred [hauchman.fred@epa.gov]; Deener, Kathleen [Deener.Kathleen@epa.gov]; Sjogren, Mya [Sjogren.Mya@epa.gov]; Plotkin, Viktoriya [Plotkin.Viktoriya@epa.gov]; Perry, Dale [Perry.Dale@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** BOSC Briefing for OP  
**Attachments:** BOSC\_Renewing Members\_5.2.17\_FINAL.DOCX  
**Location:** WJC-N 3500  
**Start:** 5/3/2017 3:30:00 PM  
**End:** 5/3/2017 4:00:00 PM  
**Show Time As:** Busy

## Board of Scientific Counselors Renewing Members

**Request:** EPA's Board of Scientific Counselors (BOSC) Executive Committee is comprised of 15 members, nine of whom have initial three-year terms that expired on April 28, 2017. ORD has submitted a request to renew these members' terms for an additional three-year period (anything beyond a total of six years requires a waiver). Eight of the nine members with expiring terms are either the Chair or the Vice-Chair of a BOSC Subcommittee. As such, the renewal of the members is critical for the continuing operations of the subcommittees. For example, the Safe and Sustainable Waters Subcommittee is preparing for an August meeting, and the involvement of the Chair and Vice-Chair at this point in time is critical to ensuring an effective meeting. We have three specific requests:

1. The immediate need to renew the nine members whose terms expired on April 28, 2017.
2. The upcoming need to renew 37 members whose terms are expiring on August 30, 2017.
3. The need for additional experts to serve on the Executive Committee, Safe and Sustainable Water Resources Subcommittee, and Sustainable and Healthy Communities Subcommittee.

**BOSC Members:** Distinguished scientists/engineers who are recognized experts in their respective fields. They:

- May come from academia, industry/business, federal, state and local governments, non-governmental and environmental organizations, research laboratories, and other relevant entities.
- Must not possess conflicts of interest or an appearance of being unable to provide impartial advice.
- Must comply with annual ethics reporting and training requirements.
- Are identified through a recruitment plan that includes solicitation of potential candidates from:
  - Within EPA
    - Assistant Administrators/Deputy Assistant Administrator/Regional Administrators
    - Associate Assistant Administrator for Outreach, Diversity, & Collaboration
    - Office of Civil Rights Special Emphasis Programs
    - Office of Human Resources
    - Office of Public Affairs Public Outreach
    - Office of Environmental Justice Listserv
    - Office of Cooperative Environmental Management
    - Office Land and Emergency Management National Tribal Program
    - EPA National Tribal Operations Committee
    - EPA Tribal Science Council
    - EPA Library Search
  - Outside of EPA
    - Federal Register Notice
    - Professional Associations (e.g., Society of Toxicology)
    - Newspapers
    - Journals and Magazines
    - National Council for Science and the Environment
    - Multicultural Environmental Leadership Development Initiative
    - Union of Concerned Scientists
    - Historically Black Colleges and Minority Institutions Environmental Technology Consortium
    - National Tribal Water Council
    - Society of Hispanic Engineers
    - Hispanic Alliance of Colleges and Universities
- Are selected based on their:
  - scientific and/or technical expertise, knowledge, and experience
  - availability to serve and willingness to commit time to the committee
  - absence of financial conflicts of interest

- absence of an appearance of a lack of impartiality
- skills working on committees and advisory panels
- background and experiences that contribute to the diversity of viewpoints on the committee (geographic, economic, social, cultural, educational backgrounds, and professional affiliations)

#### **BOSC – Overview of Member Demographics**

<b>Sector</b>	<b>BOSC Executive Committee</b>	<b>Executive Committee and Subcommittees</b>
Academia	7	37
Business (services/consulting)	2	14
Industry (goods)	1	1
State Government	2	8
NGO/Foundation	1	6
Laboratory	1	3

<b>EPA Region</b>	<b>State</b>	<b>Total</b>
Region 1	2 MA	2
Region 2	5 NY, 3 NJ	8
Region 3	3 VA, MD, 3 DC, PA	8
Region 4	5 NC, GA, 2 FL, SC, MS	10
Region 5	5 MI, IL, 2 IN, WI, 2 MN, OH	12
Region 6	3 TX,	3
Region 7	IA	1
Region 8	UT, CO	2
Region 9	4 CA, AR, 2 AZ	7
Region 10	5 WA, OR	6

#### **BOSC Background**

- Established in 1996 to provide advice and recommendations on all aspects (technical and management) of ORD's research programs
- Chartered under FACA as an ORD-operated discretionary Federal Advisory Committee (FAC)
- Consists of an Executive Committee (EC) comprised of approximately 20 members, which is supported by five subcommittees and ad hoc workgroups formed for any purpose consistent with the Charter
- Reports to the EPA ORD Assistant Administrator
- Currently exists of Executive Committee and five subcommittees:
  - Air, Climate, and Energy
  - Chemical Safety for Sustainability (covers portions of Human Health Risk Assessment)
  - Homeland Security
  - Safe and Sustainable Water Resources
  - Sustainable and Healthy Communities

#### **Recent Activities**

- Since 2015, the EC and the five subcommittees have held two face-to-face meetings to deliberate on charge questions and develop a report on specific aspects of ORD's research programs
  - Subcommittee reports are vetted and transmitted to EPA by the EC
  - Most recent report delivered February 29, 2016
- In July 2014, the BOSC EC and EPA Science Advisory Board met jointly to provide input on:
  - ORD's 2016-2019 Strategic Research Action Plans for the six research programs

- Cross-Cutting Research Roadmaps: Climate Change, Children's Environmental Health, Environmental Justice and Nitrogen and Co-pollutant

### **Distinction between BOSC and SAB**

- The SAB, in its present form, was established in 1978 by the Environmental Research, Development, and Demonstration Authorization Act (ERDDAA) (42 U.S.C. 4365)
- The BOSC is chartered under the Federal Advisory Committee Act
- SAB provides the Agency with advice and review. For ORD, this might include advice and review on:
  - Strategic level initiatives and documents (e.g., Strategic Research Frameworks);
  - Specific products with Agency level implications (e.g., Integrated Risk Information System Assessments, Hydraulic Fracturing Research Plan);
  - Specific tools/models (e.g., Emergency Consequence Assessment Tool, Lead Biokinetic Model)
- BOSC provides ORD with advice and review at the research program level:
  - Management Reviews (for example, use of peer review, human resource planning, scope and design of training programs, issues specific to ORD Labs/Centers)
  - Operational Level Technical Program Reviews (primary focus)
    - Are we doing the right research at the program level (relevance)?
    - Are we doing the research right (quality)?
    - Are the research results and products timely, communicated/transferred to users, and useful (performance)?
  - Assist ORD in Responding to Federal Requirements
    - Provide evidence for OMB evaluations using the Government Performance and Results Act (GPRA) – Modernization Act of 2010
    - BOSC Reviews were coordinated around OMB/OSTP Investment Criteria for R&D: Relevance, Quality, and Performance

### **Previous BOSC Reviews**

- BOSC Research Program Reviews
  - All five subcommittees met in 2015; EC delivered report on February 29, 2016
  - All five subcommittees met in 2016/2017; EC expected to deliver report in May 2017
- BOSC Research Program Reviews
  - Conducted reviews of 14 research programs (all programs reviewed at least once; 2005-2009)
  - Conducted follow-up reviews 2-3 years after program review to evaluate progress of implementing BOSC recommendations
- BOSC Lab/Center Reviews
  - All 5 Labs/Centers underwent review in 1998 and 2003
  - Standing subcommittees to advise: NERL (2008), NCER (2008, 2009), and NCCT (2005, 2006, 2008, 2009)
- Other Reviews
  - Review of ORD's New Strategic Research Action Plans (2012) [*joint SAB review*]
  - Review of ORD's New Strategic Research Directions (2011) [*joint SAB review*]
  - ORD Nanomaterial Case Study Workshop (2010)
  - Decision Analysis Workshop Proceedings and Report (2010)
  - Review of ORD's Management Multi-Year Plan (2006)
  - Review of Second National Coastal Conditions Report (2005)
  - Risk Assessment Workshop (2005)
  - Communicating Research Results (2004)
  - STAR Program Review (2000)

## Appointment

---

**From:** Dravis, Samantha [dravis.samantha@epa.gov]  
**Sent:** 4/7/2017 5:36:23 PM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; McGartland, Al [McGartland.Al@epa.gov]; Kopits, Elizabeth [kopits.elizabeth@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; Srinivasan, Gautam [Srinivasan.Gautam@epa.gov]; Marks, Matthew [Marks.Matthew@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; DeMocker, Jim [DeMocker.Jim@epa.gov]; Atkinson, Emily [Atkinson.Emily@epa.gov]; Irving, Verna [Irving.Verna@epa.gov]; Durham, Natalie [Durham.Natalie@epa.gov]; Inge, Carolyn [Inge.Carolyn@epa.gov]  
**Subject:** Murray 321 Case  
**Attachments:** Murray Response\_AA deck on May Plan\_4.13.17final.pptx  
**Location:** DCRoomARN3500/OPEI  
**Start:** 4/13/2017 6:00:00 PM  
**End:** 4/13/2017 6:45:00 PM  
**Show Time As:** Busy

Contact: Elizabeth Kopits <[kopits.elizabeth@epa.gov](mailto:kopits.elizabeth@epa.gov)>

### Background:

By May 15, EPA must submit a plan to the Federal Court that describes how we will comply with the Judge's order to comply with Section 321 of the Clean Air Act. The court order requires EPA to complete a major study of the electric power and coal mining sectors by July 1. And by the end of the calendar year, we need to submit evidence that we are instituting an Economic Dislocation Early Warning System -- aimed at identifying facilities threatened to close as a result of environmental regulation (covering the whole economy).

At this meeting, the contents of a proposed plan will be presented to insure that senior leaders are comfortable with the approach outlined. This will commit significant resources. It is worth noting that the CWA, RCRA, CERLCA, and TSCA have identical language as section 321 of the CAA.

## Appointment

---

**From:** Kopits, Elizabeth [Kopits.Elizabeth@epa.gov]  
**Sent:** 3/29/2017 1:40:56 PM  
**To:** Kopits, Elizabeth [Kopits.Elizabeth@epa.gov]; McGartland, Al [McGartland.Al@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]; Sasser, Erika [Sasser.Erika@epa.gov]; Weatherhead, Darryl [Weatherhead.Darryl@epa.gov]; Harvey, Reid [Harvey.Reid@epa.gov]; Haeuber, Richard [Haeuber.Richard@epa.gov]; Srinivasan, Gautam [Srinivasan.Gautam@epa.gov]; Marks, Matthew [Marks.Matthew@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Sargeant, Kathryn [sargeant.kathryn@epa.gov]; Kakade, Seema [Kakade.Seema@epa.gov]; Chapman, Apple [Chapman.Apple@epa.gov]; DeMocker, Jim [DeMocker.Jim@epa.gov]; Evans, DavidA [Evans.DavidA@epa.gov]; Chappell, Linda [Chappell.Linda@epa.gov]; Eschmann, Erich [Eschmann.Erich@epa.gov]; Deck, Leland [Deck.Leland@epa.gov]; Ferris, Ann [Ferris.Ann@epa.gov]; Maguire, Kelly [Maguire.Kelly@epa.gov]; Stenhouse, Jeb [Stenhouse.Jeb@epa.gov]  
**CC:** Durham, Natalie [Durham.Natalie@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** 321 Management Group - Briefing #4 on Task 1  
**Attachments:** Task 1 deck for briefing 4\_final.pptx; Example Summary 113.docx; Example Summary 10075.docx; Draft Research Methodology - power plants.docx  
**Location:** DCRoomARN5415PolyPCTB/DC-ARN-OAR  
**Start:** 3/30/2017 2:00:00 PM  
**End:** 3/30/2017 3:00:00 PM  
**Show Time As:** Busy

Call-in: **Conference Line/Code / Ex. 6**

## Appointment

---

**From:** Dominguez, Alexander [dominguez.alexander@epa.gov]  
**Sent:** 8/15/2017 1:08:14 PM  
**To:** Dominguez, Alexander [dominguez.alexander@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Page, Steve [Page.Steve@epa.gov]; Wood, Anna [Wood.Anna@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Marks, Matthew [Marks.Matthew@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]  
**CC:** Baptist, Erik [baptist.erik@epa.gov]; Fotouhi, David [fotouhi.david@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]; Patrick, Monique [Patrick.Monique@epa.gov]; Jones, Gail-R [Jones.Gail-R@epa.gov]; Srinivasan, Gautam [Srinivasan.Gautam@epa.gov]; Lovell, Will (William) [lovell.william@epa.gov]; DeMocker, Jim [DeMocker.Jim@epa.gov]  
**Subject:** Earthjustice/EPA (re: TX Regional Haze)  
**Attachments:** Earthjustice SC NPCA\_TX BART Comments 5-5-2017.pdf; Stamper TX BART TSD\_May 3 2017.pdf; Gray\_Texas RH BART (May 5, 2017).pdf; Thurston\_Texas BART Health Impacts (May 4, 2017).pdf; 2017-08-14 EPA Mtg Visuals (final).pptx  
**Location:** 1200 Pennsylvania Avenue, NW (North) - Room 3530 WJCN Conference Line: **Conference Line/Code / Ex. 6**  
Conference Line/Code / Ex. 6  
**Start:** 8/15/2017 5:00:00 PM  
**End:** 8/15/2017 5:45:00 PM  
**Show Time As:** Busy

**Location:** 1200 Pennsylvania Avenue, NW (North) - Room 3530 WJCN

**Directions:** Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

**EPA Contact:** For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

If calling in:

Conference Line: **Conference Line/Code / Ex. 6**  
Participant Code: **Conference Line/Code / Ex. 6**

### Request:

National Parks Conservation Association and the Sierra Club would like to meet regarding the Texas Regional Haze matter and rule expected in September. Earthjustice met with EPA Region 6 and would like to have a follow-up meeting to discuss issues of concern.

### Attendees:

The people who will be attending in person are:

Stephanie Kodish ([skodish@npca.org](mailto:skodish@npca.org))

Senior Director & Counsel, Clean Air Program National Parks Conservation Association

Nathan Miller ([nmiller@npca.org](mailto:nmiller@npca.org))

Senior Manager, Clean Air & Climate

National Parks Conservation Association

Joshua Smith ([Joshua.smith@sierraclub.org](mailto:Joshua.smith@sierraclub.org)) Staff Attorney Sierra Club Environmental Law Program

Michael Soules ([msoules@earthjustice.org](mailto:msoules@earthjustice.org)) Staff Attorney Earthjustice

Matthew Gerhart **Personal Email / Ex. 6** Of Counsel Earthjustice

The people who will attend by phone are:

Elena Saxonhouse ([elena.saxonhouse@sierraclub.org](mailto:elena.saxonhouse@sierraclub.org)) Staff Attorney Sierra Club Environmental Law Program

Mary Whittle ([mwhittle@earthjustice.org](mailto:mwhittle@earthjustice.org)) Staff Attorney Earthjustice

**Contact:**

Mary Whittle

Staff Attorney

Earthjustice

3904 Bonnell Drive

Austin, TX 78731

T: 512.537.2791

F: 212.918.1556

earthjustice.org<<http://www.earthjustice.org/>>





May 5, 2017

*Submitted via Electronic Mail and [www.regulations.gov](http://www.regulations.gov)*

Mr. Guy Donaldson  
Chief, Air Planning Section (6PD-L)  
Environmental Protection Agency  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

**RE: Docket ID No. EPA-R06-OAR-2016-0611, Comments on the Proposed Regional Haze and Interstate Visibility Transport Federal Implementation Plan for Texas**

Earthjustice, National Parks Conservation Association ("NPCA"), and the Sierra Club respectfully submit the following comments regarding the Environmental Protection Agency's ("EPA") proposed Regional Haze and Interstate Visibility Transport Federal Implementation Plan for Texas, 82 Fed. Reg. 912 (Jan. 4, 2017), EPA Docket ID No. EPA-R06-OAR-2016-0611 [hereinafter "Texas BART Proposal"]. We incorporate by reference and are attaching expert reports from Dr. H. Andrew Gray, Victoria Stamper, and Dr. George Thurston. We also incorporate by reference and are submitting as a separate docket entry comments submitted by Earthjustice, NPCA, and the Sierra Club regarding prior actions taken in the development of the Texas regional haze plan. Docket ID No. EPA-R06-OAR-2016, Tracking No. 1k1-8w7u-5px4.

Texas power plants pollute the air across a wide swath of the country. Indeed, Texas's coal-fired power plants adversely impact air quality in at least 15 national parks, monuments, and wilderness areas across seven states.<sup>1</sup> Texas generates so much air pollution that Texas power

---

<sup>1</sup> EPA, BART Screening TSD, Docket ID No. EPA-R06-OAR-2016-0611-0005 at 40; *see also* EPA, BART Modeling TSD, Docket ID No. EPA-R06-OAR-2016-0611-0006, App'x E. In its screening and modeling analysis, EPA evaluated the impacts of the BART-eligible Texas EGUs at issue at fifteen different Class I areas, including: Breton Wilderness Area in Louisiana; Big Bend and Guadalupe Mountains National Parks in Texas; Wichita Mountains National Wildlife Refuge in Oklahoma; Caney Creek and Upper Buffalo Wilderness Areas in Arkansas; Bandelier National Monument, Salt Creek, Wheeler Park, White Mountains, and Pecos Wilderness Areas, and Carlsbad Caverns National Park in New Mexico; Hercules-Glades Wilderness Area and Mingo National Wildlife Refuge in Missouri; and Great Sand Dunes National Park in Colorado. In its 2015 regional haze rulemaking for Texas and Oklahoma, EPA also noted pollution impacts from several of the same EGUs at San Pedro National Park, Bosque del Apache Wilderness

plants contribute more to haze pollution in Wichita Mountains in Oklahoma than Oklahoma sources do. In fact, the eighteen coal-fired electric generating units (“EGUs”) at issue in EPA’s proposed rule—which are among the oldest and dirtiest in Texas—collectively emit more sulfur dioxide (“SO<sub>2</sub>”) pollution than all of the sources in Oklahoma and Louisiana combined.

In spite of the massive volume of air pollution it generates, **Texas submitted a Regional Haze plan that did not require a single source to install controls or reduce emissions to protect visibility Class I areas.** Instead, Texas relied on the emission trading program in EPA’s Clean Air Interstate Rule (“CAIR”) as an alternative to making “best available retrofit technology” (“BART”) determinations for all eligible sources, including those at issue in this rule. Although the Regional Haze Rule allows states to rely on such emission trading programs in lieu of BART in limited circumstances, the D.C. Circuit Court of Appeals invalidated CAIR in 2008—nearly a year *before* Texas submitted its state implementation plan (“SIP”) proposal to EPA for review in March 2009. *See North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir.), *modified*, 550 F.3d 1176 (D.C. Cir. 2008). As a result of the D.C. Circuit’s invalidation of CAIR, EPA could not, as a matter of law, approve Texas’s reliance on the already legally-invalid CAIR trading program in lieu of BART. *See, e.g.*, 42 U.S.C. § 7410(l) (“The Administrator shall not approve a revision of a plan if the revision would interfere with . . . any other applicable requirement of this chapter.”).

In response to the D.C. Circuit’s ruling, EPA promulgated another emissions trading rule, the Cross State Air Pollution Rule (“CSAPR”), and again gave states like Texas the option of relying on the trading program as an alternative to making source-specific BART determinations under the Regional Haze Rule. Despite the opportunity presented by EPA to “streamline” compliance with BART, the State of Texas and nearly all the Texas power plant owners who are now impacted by the proposed BART rule challenged CSAPR in the D.C. Circuit, arguing that EPA did not have authority to impose pollution limits in Texas. And after protracted litigation—including an appeal to the U.S. Supreme Court—the D.C. Circuit ultimately invalidated the CSAPR emission budgets for four states, including Texas, concluding that those emission caps were more stringent than necessary to protect air quality in downwind states. *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118 (D.C. Cir. 2015) [hereinafter “*EME Homer City II*”].

In the wake of the D.C. Circuit’s invalidation of Texas’s CSAPR budgets, EPA again offered Texas the opportunity to voluntarily adopt the CSAPR budgets, and thereby avoid source-specific BART requirements under the Regional Haze Rule. Texas again refused. The state further refused to revisit its 2007 Regional Haze plan and impose BART on eligible sources. Instead, the state insists that it can continue to rely on EPA’s now-defunct, and never fully-implemented, CAIR trading program as an alternative to BART. It plainly cannot.

Because Texas has refused to correct its reliance on a non-existent emission trading program as an alternative to BART, **EPA is now required to fulfill its statutory responsibility**

---

Area, and Gila Wilderness Area in New Mexico, and Rocky Mountain National Park in Colorado. *See* Technical Support Document for the Oklahoma and Texas Regional Haze Federal Implementation Plans (FIP TSD), Docket ID No. EPA-R06-OAR-2014-0754-0007, at “TX116-007-33 Vis modeling summary” (Nov. 2014) [hereinafter “Reasonable Progress FIP TSD”].

**to correct the state's legally deficient Regional Haze plan.** In particular, EPA must now conduct source-specific BART analyses for all eligible sources in Texas.

Over 3600 individuals thus far have submitted comments to EPA seeking a final Texas BART Rule as strong as the proposal. As described in detail below, EPA's proposed BART controls are even more cost-effective than EPA has calculated. The proposed BART determinations represent a critically important minimum set of controls necessary for Texas to comply with the Regional Haze Rule and to protect air quality in Texas and out-of-state national parks and wilderness areas. These controls not only would help fulfill the statutory mandate to clean up our national parks and wilderness areas, but also, as discussed in the accompanying report by Dr. George Thurston, would yield billions of dollars in public health benefits by avoiding the premature deaths, respiratory conditions, and other health problems caused by the emissions that also contribute to haze.

## Table of Contents

<b>BACKGROUND.....</b>	<b>1</b>
I.    THE CLEAN AIR ACT’S REGIONAL HAZE PROGRAM .....	1
A.    Best Available Retrofit Technology .....	2
B.    Alternatives to BART .....	3
C.    EPA’s Reasonable Progress Plan for Texas and Oklahoma and the Fifth Circuit Stay .....	5
II.   BIG BEND, GUADALUPE MOUNTAINS, AND OTHER IMPACTED CLASS I AREAS .....	8
III.  THE REGIONAL HAZE PROGRAM’S PUBLIC HEALTH AND ECONOMIC BENEFITS .....	9
A.    EPA’s Proposed BART Controls Will Result in Billions of Dollars in Public Health Benefits Across 14 States.....	9
B.    The Proposed FIP Will Result in Additional Economic Benefits.....	15
<b>DISCUSSION .....</b>	<b>17</b>
I.    TO ASSURE COMPLIANCE WITH THE CLEAN AIR ACT’S VISIBILITY PROTECTION MANDATE, EPA MUST ISSUE A FEDERAL PLAN. ....	17
A.    EPA’s Mandatory Obligation to Issue a FIP to Satisfy the BART Requirement for Texas EGUs is Already Settled By Court Order.....	17
B.    The Complicated Procedural History of CAIR and CSAPR for Texas Does Not Relieve EPA of Its Mandatory Duty to Issue a Source-Specific BART FIP for Texas. ....	19
1. <i>Texas and Industry’s Challenge to the Cross-State Air Pollution Rule</i> 19	
2. <i>Texas’s Rejection of EPA’s Offer to Avoid BART By Voluntarily</i> <i>Joining CSAPR.....</i>	21
3. <i>EPA Withdrawal of Texas from CSAPR .....</i>	22
C.    Even if Texas Were to Remain in the Federal CSAPR Program or Adopt Similar State Emission Caps, EPA Must Finalize its Source-Specific BART Proposal for SO <sub>2</sub> . ....	23
II.   EPA’S PROPOSED SCRUBBER RETROFITS AND UPGRADES ARE REASONABLE AND LAWFUL.....	26
A.    EPA’s Analysis Indicates that All Five BART Factors Weigh in Favor of the Scrubber Retrofits and Upgrades. ....	28
1. <i>Scrubber Retrofits .....</i>	28

	2. <i>Scrubber Upgrades</i> .....	34
B.	The Scrubber Retrofits are Even More Cost Effective than EPA Calculated, and Facilities Could Achieve the Same or Lower Emission Limits with Fewer Impacts. ....	37
	1. <i>EPA’s Conservative Analysis Overestimates the Costs of New Scrubbers.</i> .....	37
	2. <i>Scrubbers Can Achieve Lower Emission Rates Than EPA Assumed, And Can Do So With Fewer Impacts.</i> .....	38
C.	EPA Must Evaluate Coal Switching or Blending in Combination with Cost-Effective Post-Combustion Controls. ....	39
D.	DSI is not BART for Any of the Texas Units.....	39
E.	EPA Should Modify the Proposed Process by Which Owners Can Seek Alternative Emission Limits for the Scrubber Upgrades. ....	40
F.	For the Units Which Occasionally Burn Oil, EPA Should, At a Minimum, Require the Stryker and Graham Units to Switch to Ultra-Low-Sulfur Diesel. ....	41
III.	EPA MUST REDO ITS ANALYSIS OF PM BART BY CONDUCTING SOURCE-SPECIFIC ANALYSES.....	42
IV.	RELIABILITY .....	44
A.	EPA May Not Weaken the Proposed Emission Limits Based on Vague, Unsupported Claims About Reliability Impacts. ....	44
B.	PA Should Include An Accurate And Complete Factual Record On Reliability In The Final Rule. ....	46
C.	Texas’s Electric Grid is in Already in Transition from Coal to Clean Energy, Independent of any Emissions Limits Imposed by BART. ....	46
	1. <i>Overview of Coal’s Decline in Texas.</i> .....	46
	2. <i>Experts and Generators Themselves Predict the Units Affected by Texas BART Proposal Will Retire Due to Continued Low Electric Prices in the ERCOT Market, Not BART Limits.</i> .....	48
	3. <i>The Special Case of Plants Regulated by the PUC, Which Can Profit off of Scrubber Installations.</i> .....	52
D.	Even if Certain Plants Retire, Texas Will Meet its Energy Needs. ....	52
E.	Localized Reliability Issues Such as Transmission Line Overloading or Instability Are Unlikely and Can Be Addressed Through ERCOT’s Standard Procedures. ....	54
F.	EPA May Establish a Process to Allow the Grid Operator to Issue RMR Contracts In the Unlikely Event that Local Reliability Issues Arise as a Result of Multiple BART Units Announcing Retirement Within a Short Timeframe. ....	57

V.	RELIANCE ON CSAPR TO SATISFY THE NO <sub>x</sub> BART REQUIREMENTS IS UNLAWFUL. ....	59
A.	It is Unlawful to Exempt a Source from Source-Specific BART Without Going Through the Statutory Exemption Process. ....	59
B.	The 2012 Better-than-BART Rule Was Flawed When It Was Issued and Is Now Based on Outdated Assumptions. ....	60
C.	EPA’s 2016 “Sensitivity Analysis” is a Back-of-the-Envelope Calculation That Does Not Justify Reliance on CSAPR.....	61
D.	It is Unlawful to Use Seasonal NO <sub>x</sub> Limits Under CSAPR to Satisfy BART, which Requires Continuous Operation of Controls. ....	62
VI.	EPA CANNOT LAWFULLY OR RATIONALLY RELY ON EXECUTIVE ORDER 13,771 TO INFLUENCE DEVELOPMENT OF THE FINAL RULE. ....	63
	<b>CONCLUSION.....</b>	<b>64</b>

## BACKGROUND

### I. THE CLEAN AIR ACT'S REGIONAL HAZE PROGRAM

In what has been lauded as “America’s best idea,” Congress first set aside national parks in the 19th century to preserve and celebrate some of the nation’s most spectacular scenery and wildlife habitat. John Copeland Nagle, *The Scenic Protections of the Clean Air Act*, 87 N.D.Rev. 571, 576 (2011). Today, these iconic areas are marred by air pollution. Much of the air pollution in national parks stems from power plant emissions of SO<sub>2</sub> and nitrogen oxides (“NO<sub>x</sub>”), which react in the atmosphere to form “haze” pollution many miles downwind of the power plants.

Recognizing the “intrinsic beauty and historical and archaeological treasures” of the national parks and wilderness areas,<sup>2</sup> Congress established “as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.” 42 U.S.C. § 7491(a)(1). In 1990, after finding that the EPA and the states had not made adequate progress toward reducing visibility impairment in the nation’s Class I areas,<sup>3</sup> Congress amended the Clean Air Act to curb emissions that may reasonably be anticipated to cause or contribute to visibility impairment at national parks and wilderness areas. *Id.* § 7492.

Congress delegated implementation of the Clean Air Act’s visibility program to EPA. In 1999, EPA promulgated the Regional Haze Rule, which requires the states (or EPA where a state fails to act) to make incremental, “reasonable progress” toward eliminating human-caused visibility impairment at each Class I area by 2064. 40 C.F.R. § 51.308(d)(1), (d)(3). In the 1999 regulations, EPA recognized that visibility impairing pollution was a regional problem that required regional solutions; the regulations create the necessary region-wide scheme to restore Class I areas to natural conditions. Furthermore, the regional haze regulations require evaluation of *all* sources of visibility impairment.

In order to achieve the goal of natural visibility in Class I areas, implementation plans must contain “emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward the national goal.” 42 U.S.C. § 7491(b)(2). The Regional Haze Rule includes several interlocking measures designed to make “reasonable progress” towards achieving the 2064 natural visibility goal. These measures include requirements to (1) determine baseline and natural visibility conditions, (2) develop reasonable progress goals based on the four factor reasonable progress evaluation visibility impairing sources, (3) implement BART for some of the oldest and dirtiest sources of haze-causing pollutants, and (4) create a long-term strategy for making reasonable progress reflective of BART and reasonable progress emission reduction requirements. *Id.*; 40 C.F.R. § 51.308(d), (e). EPA’s current proposal

---

<sup>2</sup> H.R. Rep. No. 95-294, at 203-04 (1977), *reprinted in* 1977 U.S.C.C.A.N 1077, 1282.

<sup>3</sup> Areas designated as mandatory Class I Federal areas (or Class I for short) consist of national parks exceeding 6,000 acres, national wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. *See* 42 U.S.C. § 7472(a).

addresses only the BART component of the Texas regional haze plan.<sup>4</sup>

### **A. Best Available Retrofit Technology**

As a critical, minimum element of any regional haze plan, the state (or EPA, where the state fails to do so) must require BART controls at fossil fuel-fired power plants and other major stationary sources that “may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area,” and were in existence in 1977, but were not in operation before 1962. 42 U.S.C. § 7491(b)(2)(A); 40 C.F.R. § 51.308(e). The term “major stationary source” is defined to include any source that has the potential to emit 250 tons per year or more of any pollutant, and falls within one of 26 categories of industrial sources defined by the Act. 42 U.S.C. § 7491(g)(7).

BART is defined as “an emission limitation based on the degree of reduction achievable through the application of the *best* system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility.” 40 C.F.R. § 51.301 (emphasis added). When determining BART, the states and EPA must analyze “the best system of continuous emission control technology available” by taking into consideration five factors: (1) the costs of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) existing pollution controls at the source, (4) the remaining useful life of the source, and (5) the degree of visibility improvement from pollution controls. *Id.* § 51.308(e)(1)(ii)(A).<sup>5</sup> BART is an essential component of the regional haze program because Congress largely grandfathered these antiquated sources into many of the Clean Air Act’s requirements. *See* 70 Fed. Reg. 39,104, 39,111 (July 6, 2005). BART compels these older, disproportionately-polluting sources to install up-to-date and cost-effective pollution controls.

BART is a mandatory measure that must be implemented to achieve reasonable progress toward restoration of natural visibility conditions. The Clean Air Act expressly requires states to adopt SIPs that contain “emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal . . . *including*” the installation and operation of BART at eligible sources that emit any air pollutant which may reasonably be anticipated to cause or contribute to visibility impairment in any Class I area. 42 U.S.C. § 7491(b)(2) (emphasis added). The only permissible exemption from BART is when EPA, by rule promulgated with sufficient notice and opportunity for public comment, determines that (1) the source does not “by itself or in combination with other sources” cause or contribute to significant visibility impairment at a Class I area; (2) if the power plant has a design capacity

---

<sup>4</sup> On July 15, 2016, the Fifth Circuit stayed EPA’s prior disapproval and promulgation of a Federal Implementation Plan addressing the so-called reasonable progress portions of Texas’s Regional Haze plan. *See Texas v. EPA*, 829 F.3d 405 (5th Cir. 2016). The Fifth Circuit subsequently granted EPA’s motion requesting voluntary remand of the rule so that the agency could reconsider its reasonable progress determinations.

<sup>5</sup> Visibility is typically measured in deciviews (“dv”), which is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions, from pristine to highly impaired. 40 C.F.R. § 51.301.



of 750 megawatts or greater, the owner or operator must demonstrate to EPA that the plant is located at such a distance from all Class I areas that it does not “by itself or in combination with other sources” emit pollution that may reasonably be anticipated to cause or contribute to significant visibility impairment at a Class I area; and (3) the affected Federal Land Managers concur with the BART exemption. *Id.* § 7491(c).<sup>6</sup>

## **B. Alternatives to BART**

Under the statute and EPA’s implementing regulations, the default approach to meeting the BART requirements is for a state to consider the five statutory factors on a case-by-case basis. *See* 42 U.S.C. § 7491(b)(2)(A) (requiring BART “for each major stationary source”); 40 C.F.R. § 51.308(e)(1)(ii)(A) (“[t]he determination of BART must be based on an analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each BART-eligible source”). However, EPA’s regulations purport to allow states to waive the BART requirements through “an emissions trading program or other alternative measure” rather than by setting BART limits on a case-by-case basis if the applicable standards for using an alternative are met. 40 C.F.R. § 51.308(e)(2).

An alternative to BART “must achieve greater reasonable progress than would be achieved through the installation and operation of BART.” 40 C.F.R. § 51.308(e)(2). A state may demonstrate that an alternative program makes greater reasonable progress than BART by proving that under the alternative program (1) visibility does not decline in any Class I area, (2) there is an overall improvement in visibility compared to BART at all affected Class I areas, and (3) all necessary emission reductions take place during the period of the first long-term strategy for regional haze. *Id.* § 51.308(e)(3)(i)-(iii).

Trading programs give sources emission allocations and then allow sources to trade the allowances. One such trading program is CSAPR. EPA issued CSAPR to promote downwind attainment of national health standards for ozone and particulate matter (“PM”) by reducing upwind emissions of NO<sub>x</sub> and SO<sub>2</sub>. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1596 (2014). CSAPR sets state budgets for emissions of NO<sub>x</sub> and SO<sub>2</sub>, and then authorizes sources to make intrastate and interstate emission trades to meet compliance obligations. 76 Fed. Reg. 48,208 (Aug. 8, 2011).<sup>7</sup> CSAPR, which was to be fully implemented by 2014, replaced CAIR, which had been remanded following previous litigation, although the D.C. Circuit left the rule in place pending further action by EPA. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. at 1595-96 (citing *North Carolina v. EPA*, 550 F.3d 1176, 1178 (D.C. Cir. 2008) (*per curiam*)). EPA later issued a rule finding that CSAPR was “Better-than-BART,” meaning that EPA concluded it achieved “greater reasonable progress towards the national goal of achieving natural visibility conditions in Class I areas than source-specific [BART] in those states covered

---

<sup>6</sup> *See also* 40 C.F.R. § 51.308(e) (requiring BART for each eligible source “that may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area, unless the State demonstrates that an emissions trading program or other alternative will achieve greater reasonable progress toward natural visibility conditions.”).

<sup>7</sup> *See also* EPA, Cross-State Air Pollution Rule (CSAPR)—Basic Information, <https://www.epa.gov/csapr/cross-state-air-pollution-rule-csapr-basics> (attached).

by the Transport Rule.” 77 Fed. Reg. 33,642, 33,643 (June 7, 2012) [hereinafter the “CSAPR-Better-than-BART Rule”].

To support its conclusion that CSAPR makes greater reasonable progress than BART, EPA compared CSAPR as it existed in 2011 to presumptive BART. However, EPA subsequently made significant changes to both the emission limits and the compliance deadlines for CSAPR. Although EPA conducted a “sensitivity” analysis in 2012, which purports to demonstrate that CSAPR remains “Better-than-BART” despite significant increases in emission budgets for certain states, including Texas, the agency has not fully updated its “Better-than-BART” technical analysis, as required by the Regional Haze Rule, to examine whether the revised version of CSAPR makes greater reasonable progress than BART. *See* 40 C.F.R. § 51.308(e)(2)-(3) (if the distribution of emissions is different under an alternative program, a state “must conduct dispersion modeling” to demonstrate that, under the BART alternative, (i) visibility does not decline in any Class I area, and (ii) there is an overall improvement in visibility over all affected Class I areas). Because EPA has failed to make the required technical demonstration that any emission trading program for Texas “will achieve greater reasonable progress than would have resulted from the installation and operation of BART at all sources subject to BART,” *id.* § 51.308(e)(2)(i), the agency cannot rely on a trading program, including BART, for Texas.<sup>8</sup>

Even if EPA had conducted a proper technical demonstration for Texas, such a finding does not exempt BART sources from emission control requirements to advance reasonable progress if they continue to cause or contribute to visibility impairment. *Id.* § 51.308(e). The Regional Haze Rule requires states to look beyond BART for additional emissions reductions that provide for “reasonable progress” toward 2064 natural visibility goal for Class I national parks and wilderness areas. 42 U.S.C. § 7491(b)(2)(B); 40 C.F.R. § 51.308(d).<sup>9</sup> Indeed, in *Utility Air Regulatory Group v. EPA*, 471 F.3d 1333 (D.C. Cir. 2006), the D.C. Circuit upheld EPA’s “Better-than-BART” determination for CSAPR’s predecessor, but the court in no way reduced the states’ or EPA’s authority and obligation to require updated pollution controls to ensure reasonable progress at each Class I area. The court stated:

[U]nless there is some reasonable excuse, [a regional haze plan’s reasonable] progress must be sufficient to attain natural visibility conditions at every single Class I area by 2064. Indeed, EPA emphasized in its briefs that because “the regulatory scheme as a whole (and all the regulations promulgated pursuant to it) must be designed to achieve the goal [of reasonable progress] at *every* Class I area,” states must, if CAIR is substituted for BART and is not likely to achieve that goal, take “other measures as necessary to achieve reasonable

---

<sup>8</sup> *See* Letter from David Baron to EPA, Docket ID No. EPA-HQ-OAR-2016-0598-0014 (Jan. 9, 2017) (attached).

<sup>9</sup> Under Section 51.308(e)(5) of the Regional Haze Rule, “[a]fter a State has met the requirements for BART or implemented emissions trading program or other alternative measure that achieves more reasonable progress than the installation and operation of BART, BART-eligible sources will be subject to the requirements of paragraph (d) of this section in the same manner as other sources.”

progress goals including at *each* Class I area.”

*Id.* at 1340 (internal citations omitted); *see also* 70 Fed. Reg. at 39,138 n.73 (“The reasonable progress test in the Regional Haze Rule remains as a separate test from [CAIR’s] better than BART” determination.). The court recognized that BART and “Better-than-BART” alternatives are merely one mechanism for achieving the Clean Air Act mandate of restoring natural visibility conditions to each Class I national park and wilderness area.

Under a trading program such as CSAPR, some sources may reduce emissions significantly, while others may not reduce emissions at all or may even increase emissions. When EPA originally authorized alternatives to BART, EPA recognized that trading programs can create “hot spots”: areas where emissions fail to decrease, or even increase. 71 Fed. Reg. 60,612, 60,627 (Oct. 13, 2006). To address this problem, EPA inserted a provision whereby states that opt to use an alternative program and waive the BART requirements can supplement the alternative program to address any pollution not adequately controlled by the alternative program. EPA calls this provision a “geographic enhancement.” 40 C.F.R. § 51.308(e)(2)(v).

Due to the flexible, market driven nature of a trading program, there is no assurance that benefits in reduced pollution will be realized at the very places intended for restoration under the Clean Air Act’s visibility protection mandate. This can lead to visibility hot spots when a source near a Class I area purchases emission allowances from a distant source rather than reduces emissions, or when a group of sources in the same region purchase emission allowances rather than reducing emissions. Source specific pollution controls are particularly important under emission trading programs because those trading programs do not require installation of pollution controls.

### **C. EPA’s Reasonable Progress Plan for Texas and Oklahoma and the Fifth Circuit Stay**

Despite the massive amount of visibility-impairing pollution coming from Texas sources, Texas failed to submit a haze plan to EPA by the 2007 deadline set by Congress. In 2009, EPA published an official finding to that effect. Finding of Failure to Submit State Implementation Plans Required by the 1999 Regional Haze Rule, 74 Fed. Reg. 2392 (Jan. 15, 2009). In response, Texas submitted a proposed haze plan to EPA in 2009, two years after the original deadline. Approval and Promulgation of Implementation Plans; Texas and Oklahoma, 81 Fed. Reg. 296 (Jan. 5, 2016) [hereinafter the “Oklahoma and Texas Reasonable Progress Rule”].

The Texas regional haze plan did not require a single source to install any controls to reduce haze-causing air pollution. 81 Fed. Reg. at 300. Because of this, the Texas plan would not have achieved natural visibility conditions at Big Bend and the Guadalupe Mountains National Parks until more than a century after the 2064 natural visibility goal.<sup>10</sup> In addition, the plan would have allowed Texas sources to continue to impair visibility at Oklahoma’s Wichita Mountains and other out-of-state national parks and wilderness areas without having to install

---

<sup>10</sup> See Reasonable Progress FIP TSD, Docket ID No. EPA-R06-OAR-2014-0754-0007, at “Vis modeling summary” – “2018 RPG calcs” tab.

the kinds of pollution controls that have been required from other states to benefit the same places. *See, e.g., Oklahoma v. EPA*, 723 F.3d 1201, 1207-10 (10th Cir. 2013) (affirming plan to require four power plant units in Oklahoma to install scrubbers).

The Clean Air Act required EPA formally to approve or disapprove Texas's plan within 18 months of submittal. 42 U.S.C. § 7410(k). By 2011, EPA still had not taken final action. In August 2011, Sierra Club and NPCA, along with the Environmental Defense Fund, sued EPA, and on March 30, 2012, the District Court entered a consent decree requiring EPA to take final action on the Texas and Oklahoma regional haze plans by a date certain. *See Consent Decree, NPCA v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. entered Mar. 30, 2012) (ECF Doc. 21).

The consent decree was amended several times due to numerous delays by the agency, and the governing amendment required EPA to sign a notice of final rulemaking for the reasonable progress provisions of both the Oklahoma and Texas plan by December 9, 2015. In that action, EPA promulgated a federal implementation plan for Texas and Oklahoma to meet the required reasonable progress elements of the regional haze implementation plan. The amendment further requires EPA to sign a notice of final rulemaking by September 9, 2017 to complete the balance of the Texas regional haze plan requirements, specifically BART. *Id.*

In December 2015, EPA issued a final rule approving in part and disapproving in part Texas's regional haze plan, as well as portions of Oklahoma's "interconnected" plan. *See* 81 Fed. Reg. 296. As required by the Clean Air Act, 42 U.S.C. § 7410(c)(1), EPA issued a partial federal plan to correct the deficiencies in Texas's submittal which EPA had disapproved. 81 Fed. Reg. at 297. To achieve reasonable progress at impacted Class I areas, the federal plan required eight of the oldest and dirtiest power plants in Texas to install and operate pollution controls to reduce sulfur dioxide emissions. EPA required seven units at these facilities to install new pollution controls (scrubbers) and eight units to upgrade old scrubbers to achieve the emission limits which modern scrubbers are capable of achieving.<sup>11</sup>

EPA estimated that its haze plan would reduce harmful SO<sub>2</sub> pollution by approximately 230,000 tons annually. *Id.* at 298. These emission reductions would help clean the air, improving and extending the scenic views at national parks and wilderness areas throughout the region. The reductions would also yield significant health benefits and further the "overriding" and "paramount" public health goals of the Clean Air Act. *See* H.R. Conf. Rep. 95-564, 189 (1977), *reprinted in* 1977 U.S.C.A.N.N. 1502, 1570.

As explained below and in more detail in Dr. Thurston's attached report, SO<sub>2</sub> causes and exacerbates asthma and other respiratory diseases, leads to increased hospitalizations and morbidity, and forms particulate matter that can aggravate respiratory and heart diseases and

---

<sup>11</sup> Specifically, the federal implementation plan required Big Brown 1 & 2, Monticello 1 & 2, Coletto Creek 1, and Tolk 171B & 172B to install new scrubbers and Sandow 4, Martin Lake 1, 2, & 3, Monticello 3, and Limestone 1 & 2 to upgrade their existing, inefficient scrubbers. The plan required San Miguel to reduce its emissions with existing controls. *See* 81 Fed. Reg. at 305, 351-52.

cause premature death.<sup>12</sup> By reducing harmful air pollution, EPA's reasonable progress haze plan would have saved at least 300 lives, prevented thousands of asthma-related or cardiovascular events and hospitalizations, and prevent tens of thousands of lost work and school days *each year*. Report of Dr. George Thurston, Docket ID No. EPA-R06-OAR-2014-0754-0071, at 16 (Apr. 18, 2015). The public health benefits from the rule would have exceeded \$3 billion annually. *See id.* at 17-18.

Even though EPA found under 42 U.S.C. § 7607(b)(1) that the rule under review was based on a determination of "nationwide scope or effect," such that any challenge could be brought "only" in the Court of Appeals for the D.C. Circuit, 81 Fed. Reg. at 349, petitioners filed seven petitions for review in the Fifth Circuit Court of Appeals. At the same time, all of the petitioners challenged the same rule in the D.C. Circuit, and several of them also challenged the same rule in the Tenth Circuit.<sup>13</sup> EPA moved to dismiss or transfer the Fifth Circuit petitions to the D.C. Circuit, while the petitioners moved to stay the rule's compliance deadlines pending judicial review.

On July 15, 2016, the panel denied EPA's motion to dismiss or transfer and granted the motion to stay. *See Texas v. EPA*, 829 F.3d 405 (5th Cir. 2016). On August 19, 2016, the Court granted the parties' joint motion to stay all proceedings, including the deadline for filing any petition for rehearing *en banc*, until November 28, 2016, to accommodate settlement discussions. Those settlement discussions did not lead to a negotiated resolution.

Despite the significant clean air benefits to Texas and the southeast United States described above and the fact that the haze plan for Texas is now almost a decade overdue, EPA sought and was granted (on March 22, 2017) a partial voluntary remand of the Oklahoma and Texas Reasonable Progress Rule. EPA did not request that the Fifth Circuit vacate the rule. Rather, EPA sought a voluntary remand so that it could reconsider the Oklahoma and Texas Reasonable Progress Rule, and EPA expressly consented to the Fifth Circuit's stay of the rule remaining in place during remand.

The rule that was stayed by the Fifth Circuit and has now been remanded to the agency is independent from BART requirements for Texas EGUs. *See, e.g.*, 81 Fed. Reg. at 346 ("We are not taking action on 40 CFR 51.308(e) concerning Texas EGU BART."). The Oklahoma and Texas Reasonable Progress Rule instead addressed the statutory and regulatory requirement to make "reasonable progress" toward eliminating haze. *See* 42 U.S.C. § 7491(b)(2), (g)(1); 40 C.F.R. § 51.308(d). BART is a separate, mandatory CAA requirement that applies to particular categories of sources constructed during a specific time frame. *See* 42 U.S.C. § 7491(b)(2)(A), (g)(2); 40 C.F.R. § 51.308(e); *see also Arizona ex rel. Darwin v. EPA*, 815 F.3d 519, 533 (9th Cir. 2016) ("[T]he implementation of the BART determinations will ultimately contribute toward meeting the reasonable progress goals. But the Act sets out standards for BART that are

---

<sup>12</sup> EPA, Sulfur Dioxide Basics (last updated Aug. 16, 2016) <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> (attached).

<sup>13</sup> *See* Order, *Texas v. EPA*, No. 16-1078 (D.C. Cir. Mar. 11, 2016) (consolidating petitions for review filed in the D.C. Circuit); Order, *Luminant Generation Co. v. EPA*, No. 16-9508 (10th Cir. June 16, 2016) (consolidating petitions for review filed in the Tenth Circuit).

freestanding, source-by-source, and not dependent on the long term visibility goals identified.”); *Util. Air Regulatory Grp. v. EPA*, 471 F.3d 1333, 1340 (D.C. Cir. 2006) (holding that – in addition to the mandatory BART requirement – a regional haze plan’s reasonable progress “must be sufficient to attain natural visibility conditions at every single Class I area by 2064”). 81 Fed. Reg. at 302. In the Oklahoma and Texas Reasonable Progress Rule, EPA took no action regarding the CAA requirements for BART for EGUs. 81 Fed. Reg. at 301-02.

## **II. BIG BEND, GUADALUPE MOUNTAINS, AND OTHER IMPACTED CLASS I AREAS**

As discussed in detail below, in finalizing the proposed BART controls for Texas sources, EPA is acting under its obligation to restore natural air quality in Class I areas in Texas, Oklahoma, Arkansas, New Mexico, Louisiana, Colorado, and Missouri.<sup>14</sup> Emissions from Texas sources impact two in-state Class I areas: Big Bend National Park and Guadalupe Mountains National Park. Both national parks are located in west Texas and contain spectacular scenic views that draw visitors from across the United States and around the world. “Big Bend National Park is known for its scenic beauty, which ranges from stark seemingly barren wastelands to majestic forested mountains to gigantic canyons.”<sup>15</sup> Guadalupe Mountains National Park is an “internationally significant” park, in part, because of its “[s]pectacular scenery,” which is a “major attraction for visitors.”<sup>16</sup> Guadalupe Mountains is home to the highest summit in Texas, as well as the culturally significant peak, El Capitan, which has been used as signal peak by travelers and settlers for hundreds—perhaps thousands—of years.<sup>17</sup>

Air pollution from Texas sources mars the unique scenic views at both Big Bend and Guadalupe Mountains. The National Park Service has acknowledged that “[t]he scenic beauty of Big Bend National Park is often spoiled by haze that obscures its many vistas.”<sup>18</sup> This haze is primarily caused by NO<sub>x</sub>, SO<sub>2</sub>, and PM pollution from power plants and other anthropogenic sources.<sup>19</sup> For example, at Big Bend, baseline visibility impairment on the most impaired days is

---

<sup>14</sup> Two additional reports, relying on EPA emissions data, detail the disproportionate level of harmful SO<sub>2</sub> pollution released by Texas power plants covered by this rule as compared to sources in other states. Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States (May 2014), <http://www.nrdc.org/air/pollution/benchmarking/files/benchmarking-2014.pdf>; Daniel Cohan, Addressing pollution from legacy coal power plants in Texas (June 2013), <http://www.dallas-cms.org/news/coalplants.pdf>.

<sup>15</sup> Nat’l Park Serv. (NPS), *Big Bend National Park General Management Plan* 103 (2004), <http://www.nps.gov/bibe/parkmgmt/gmp.htm>.

<sup>16</sup> NPS, *Guadalupe Mountains National Park Draft General Management Plan* 152 (2008), <http://parkplanning.nps.gov/documentsList.cfm?parkID=69&projectID=11120>.

<sup>17</sup> *Id.* at 5.

<sup>18</sup> NPS, *Understanding Haze in Big Bend National Park*, [http://www.nps.gov/bibe/learn/nature/upload/Bravo\\_Fact\\_Sheet.pdf](http://www.nps.gov/bibe/learn/nature/upload/Bravo_Fact_Sheet.pdf) (attached).

<sup>19</sup> See, e.g., Reasonable Progress FIP TSD, Docket ID No. EPA-R06-OAR-2014-0754-0007, at A-17.

17.3 dv.<sup>20</sup> These baseline visibility conditions are far worse than natural visibility conditions at Big Bend, which are 7.16 dv, according to EPA.<sup>21</sup> Similarly, according to EPA, at Guadalupe Mountains, baseline visibility impairment on the most impaired days is 17.19 dv, while natural visibility is 6.65 dv.<sup>22</sup>

Emissions from Texas sources also impair visibility at Class I areas in other states. As EPA explained in the Texas and Oklahoma Reasonable Progress Plan as well as in the Texas BART Proposal, Texas sources cause significant visibility impairment at the Wichita Mountains Wilderness Area in Oklahoma that are “several times greater than the impact from Oklahoma’s own point sources.” 79 Fed. Reg. at 74,822. Texas sources also cause visibility impairment in at least 12 other national parks, monuments, and wilderness areas across seven states.<sup>23</sup>

### **III. THE REGIONAL HAZE PROGRAM’S PUBLIC HEALTH AND ECONOMIC BENEFITS**

In addition to improving visibility, EPA’s proposed BART controls for Texas will yield significant public health, economic, and other environmental benefits.

#### **A. EPA’s Proposed BART Controls Will Result in Billions of Dollars in Public Health Benefits Across 14 States.**

The same pollutants that cause visibility impairment also cause significant public health impacts. NO<sub>x</sub> is a precursor to ground level ozone, which is associated with respiratory diseases, asthma attacks, and decreased lung function. Similarly, SO<sub>2</sub> increases asthma symptoms, leads to increased hospital visits, and can form particulates that aggravate respiratory and heart diseases and cause premature death.<sup>24</sup> Both NO<sub>x</sub> and SO<sub>2</sub> react with ammonia, moisture, and other compounds to form fine particulate matter (“PM<sub>2.5</sub>”) that can

---

<sup>20</sup> *Id.* at 34; *see also* 79 Fed. Reg. at 74,832.

<sup>21</sup> Reasonable Progress FIP TSD at 34, Table 19.

<sup>22</sup> *Id.*

<sup>23</sup> EPA, BART Screening TSD, Docket ID No. EPA-R06-OAR-2016-0611-0005 at 40; *see also* EPA, BART Modeling TSD, Docket ID No. EPA-R06-OAR-2016-0611-0006, App’x E. In its screening and modeling analysis, EPA evaluated the impacts of the BART-eligible Texas EGUs at issue at fifteen different Class I areas, including: Breton Wilderness Area in Louisiana; Big Bend and Guadalupe Mountains National Parks in Texas; Wichita Mountains National Wildlife Refuge in Oklahoma; Caney Creek and Upper Buffalo Wilderness Areas in Arkansas; Bandelier National Monument, Salt Creek, Wheeler Park, White Mountains, and Pecos Wilderness Areas, and Carlsbad Caverns National Park in New Mexico; Hercules-Glades Wilderness Area and Mingo National Wildlife Refuge in Missouri; and Great Sand Dunes National Park in Colorado. In its 2015 regional haze rulemaking for Texas and Oklahoma, EPA also noted pollution impacts from several of the same EGUs at San Pedro National Park, Bosque del Apache Wilderness Area, and Gila Wilderness Area in New Mexico, and Rocky Mountain National Park in Colorado. *See* Reasonable Progress FIP TSD, Docket ID No. EPA-R06-OAR-2014-0754-0007, at “Vis modeling summary”; *see also* 79 Fed. Reg. at 74,830; Texas SIP at 1-5, 11-7 to 11-28.

<sup>24</sup> 75 Fed. Reg. 35,520, 35,525.

cause and worsen respiratory diseases, aggravate heart disease, and lead to premature death.<sup>25</sup> PM<sub>2.5</sub> can penetrate deep into the lungs and cause a host of health problems, such as aggravated asthma, chronic bronchitis, and heart attacks.<sup>26</sup> In 2005, EPA valued the regional haze program's BART health benefits nationally at \$8.4 to \$9.8 billion annually.<sup>27</sup>

Dr. George D. Thurston, a professor of Environmental Health at the New York University School of Medicine, and a nationally-renowned expert in the field, conducted a health risk analysis of EPA's proposed BART controls. Dr. Thurston found that EPA's proposed SO<sub>2</sub> emissions reductions will significantly reduce the serious public health toll imposed by Texas coal-burning power plants on residents of Texas and Oklahoma, as well as residents across the central United States.<sup>28</sup>

Dr. Thurston estimates that the proposed SO<sub>2</sub> reductions for just the 18 EGUs at issue will save at least 677 lives *each year* across 14 states, and prevent thousands of asthma-related or cardiovascular events and hospitalizations every year. Thurston Health Report at 18-19, Tables 1-2. All told, Dr. Thurston "conservatively estimate[s]" the total public health-based economic benefits associated with these reductions will be more than \$6.7 billion each year. *Id.* at 17-18.<sup>29</sup> **The health-related monetary benefits associated with SO<sub>2</sub> reductions at**

---

<sup>25</sup> EPA—Sulfur Dioxide Basics, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> (attached).

<sup>26</sup> EPA—Particulate Matter Basics, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM> (attached).

<sup>27</sup> EPA, Fact Sheet – Final Amendments to the Regional Haze Rule and BART Guidelines, [https://www.epa.gov/sites/production/files/2016-02/documents/fs\\_2005\\_6\\_15.pdf](https://www.epa.gov/sites/production/files/2016-02/documents/fs_2005_6_15.pdf) (attached). It is important to note that EPA's study focused primarily on the BART component of the Regional Haze Rule. EPA, Regulatory Impact Analysis for Final Clean Air Visibility Rule of the Guidelines for Best Available Retrofit Technology (BART) Determinations Under the Regional Haze Regulations, EPA-452/R-05-004, Docket ID No. EPA-HQ-OAR-2002-0076-0496 (June 2005), [https://www.epa.gov/sites/production/files/2016-02/documents/bart\\_ria\\_2005\\_6\\_15.pdf](https://www.epa.gov/sites/production/files/2016-02/documents/bart_ria_2005_6_15.pdf) [hereinafter "2005 BART RIA"] (attached). Moreover, EPA's 2005 Regulatory Impact Analysis likely underestimates significantly the health benefits of the regional haze program and BART. Indeed, EPA's analysis assumed that SO<sub>2</sub> BART emission limits of only .15 lbs/MMBtu, as opposed to the significantly lower limits in EPA's proposed BART rule for Texas. *Compare id.* at 7-2, Table 7-1, *with* 82 Fed. Reg. at 949. Moreover, EPA's study "assumes that BART-eligible EGUs affected by the Clean Air Interstate Rule (CAIR) (March 2005) have met the requirements of this rule. Thus, no additional controls for EGUs beyond CAIR are anticipated or modeled for the 28 State plus District of Columbia CAIR region." 2005 BART RIA at 2-6. Similarly, the model assumed that "no additional SO<sub>2</sub> controls for sources located in States of Arizona, Utah, Oregon, Wyoming, and New Mexico or Tribal lands located in these States due to agreements made with the Western Regional Air Partnership (WRAP)."

<sup>28</sup> Written Report of George D. Thurston Regarding the Public Health Benefits of EPA's Proposed Rulemaking Regarding Best Available Retrofit Technology for Texas Sources Under the Regional Haze Rule (May 4, 2017) [hereinafter, "Thurston Health Report"] (attached).

<sup>29</sup> Dr. Thurston derived this estimate using an EPA-approved health risk modeling program, in which mortality change is the product of the projected change in air pollution, exposed population, incidence of mortality, and a "mortality effect estimate." *Id.* at 15, 17. The mortality



**Texas’s three largest sources of SO<sub>2</sub> pollution—Big Brown, Martin Lake, and Monticello—will alone be more than \$4.3 billion across the 14 states most affected by Texas pollution.** *Id.* at 19, Table 3. These are *annual* benefits, meaning that “ten years from the compliance date, the health benefits and valuations of the proposed controls will be roughly ten times” that estimate, before adjustment for a discount rate, as appropriate. *Id.* at 21.

Dr. Thurston arrived at these estimates by relying on air quality modeling conducted by Dr. H. Andrew Gray who used EPA’s standard air quality modeling methodology to (1) estimate the incremental PM<sub>2.5</sub> concentrations attributable to each source unit affected by this EPA action, (2) modeled the gridded three-year average PM<sub>2.5</sub> concentrations for the high (*i.e.*, EPA’s 2001-2004 emission baseline) and low emission (*i.e.*, EPA proposed SO<sub>2</sub> BART limit) scenarios, and then (3) estimated the incremental PM<sub>2.5</sub> concentration at 837 county receptors in Texas and its surrounding states for the control scenarios.<sup>30</sup> Dr. Thurston then used the EPA-approved health risk modeling program, called BenMAP, to translate these pollution reductions into human health outcomes.<sup>31</sup> As Dr. Thurston summarized in the following tables, even when applying the most conservative estimate of mortality—one comparable to the estimate EPA relied upon in 2005, to evaluate the regulatory impacts of the Regional Haze Rule—the public health benefits and avoided medical costs associated with EPA’s proposed BART controls are considerable.

---

effect estimate is an estimate of the percentage change in mortality due to a one unit change in ambient air pollution. Epidemiological studies are a well-established source for such estimates. In this analysis, Dr. Thurston relied primarily upon a mortality effects estimate that is consistent with the estimate used by EPA in the agency’s 2005 nationwide analysis of the health benefits of Guidelines for Best Available Retrofit Technology (BART) Determinations Under the Regional Haze Regulations. As Dr. Thurston explains, this estimate is a conservative (*i.e.*, low) mortality effect estimate because it accounts only for reductions in fine particulate matter and not the co-benefits associated with reduced SO<sub>2</sub> and other pollutants.

<sup>30</sup> *Id.* at 16.

<sup>31</sup> *Id.* In all, Dr. Thurston evaluated the public health benefits across 837 county receptors in fourteen states: Alabama, Arkansas, Colorado, Illinois, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma, Tennessee, and Texas.

**Table 1. Health Benefits from EPA's Proposed BART Controls Across 14-State Region<sup>32</sup>**

<b>Health Endpoint</b>	<b>Expected Number Per Year Avoided*</b>	<b>Total Dollar Valuation (2010\$)**</b>
Respiratory Hospital Admissions (Kloog et al., 2012; Zanolletti et al., 2009)	125 <sup>a</sup>	\$3,966,000
Cardiovascular Hospital Admissions (Bell et al., 2008; Peng et al., 2008; Peng et al., 2009; Zanolletti et al., 2009)	125 <sup>a</sup>	\$4,733,000
Acute Bronchitis (Dockery et al., 1996)	1317	\$633,000
Acute Myocardial Infarction, Nonfatal (Pope et al., 2006; Sullivan et al., 2005; Zanolletti et al., 2009; Zanolletti & Schwartz, 2006)	80 <sup>b</sup>	\$10,094,000 <sup>a</sup>
Emergency Room Visits (Glad et al., 2012; Mar et al., 2010; Slaughter et al., 2005)	381 <sup>b</sup>	\$162,000 <sup>a</sup>
Asthma Exacerbation Symptoms (Mar et al., 2004; Ostro et al., 2001)	24,818 <sup>b</sup>	\$1,434,000
Upper Respiratory Symptoms (Pope et al., 1991)	23,915	\$795,000
Lower Respiratory Symptoms (Schwartz and Neas, 2000)	16,767	\$352,000
Minor Restricted Activity Days (Ostro & Rothschild, 1989)	625,525	\$42,754,000
Work Days Lost (Ostro et al., 1987)	105,853	\$15,803,000
Chronic Bronchitis (Abbey et al., 1995)	521	\$147,152,000 <sup>c</sup>
Mortality, All Causes (Krewski et. al, 2009)	678	\$6,518,235,000
Mortality, All Causes (Lepeule et. al, 2012)	1541	\$14,823,929,000
Mortality, All Causes (Laden et al., 2007)	1760	\$16,921,843,000

\* Rounded to nearest whole number.

\*\* Rounded to nearest \$1000.

a Pooled effects with averaging approach, as per EPA BenMAP default setting.

b Pooled effects with random/fixed effects approach, as per EPA BenMAP default setting.

c Pooled effects with summation approach, as per EPA BenMAP default setting.

<sup>32</sup> Reproduced from the Thurston Health Report at 18, Table 1, Annual Multi-State Human Health Effects and Monetary Valuations Associated With the PM<sub>2.5</sub> Air Pollution Avoided by Applying EPA's Proposed BART Controls for Texas Sources.

**Table 2. State-By State Total Valuation of Annual Health Benefits of EPA Proposed BART Controls Applied to the Nine Power Plants At Issue\* (Applying Krewski et al., 2009 for mortality)**

State	Total Dollar Valuation (2010\$)**
AL	\$57,080,000
AR	\$522,356,000
CO	\$5,564,000
IL	\$46,516,000
IN	\$12,432,000
KS	\$152,556,000
KY	\$35,415,000
LA	\$492,830,000
MS	\$241,108,000
MO	\$324,832,000
NM	\$38,796,000
OK	\$771,304,000
TN	\$149,283,000
TX	\$3,896,042,000
Total	\$6,746,113,000

\* Big Brown, Coletto Creek, Fayette, Harrington, JT Deely, Martin Lake, Monticello, Parish, and Welsh.

\*\* Rounded to nearest \$1000.

**Table 3. Plant-By Plant Total Valuation of Annual Health Benefits of EPA Proposed BART Controls (Applying Krewski et al., 2009 for mortality)**

Electric Generating Station	Total Dollar Valuation (2010\$)*
Big Brown	\$1,617,952,000
Coletto Creek	\$261,901,000
Fayette	\$495,331,000
Harrington	\$153,627,000
JT Deely	\$508,409,021
Martin Lake	\$1,135,234,000
Monticello	\$1,553,080,000
Parish	\$816,736,000
Welsh	\$203,842,000
Total	\$6,746,113,000

\* Rounded to nearest \$1000.

The results of Dr. Thurston's analysis of EPA's Texas BART Proposal are hardly surprising given the extensive and ever-growing scientific data showing strong correlations between exposure to air pollution from coal-fired power plants and adverse health impacts to human beings. Dr. Thurston's findings show that EPA's proposed BART controls will result in significant and quantifiable public health benefits across a large swath of the central United States. These public health benefits vastly outweigh the projected capital costs associated with EPA's proposed BART controls.

In finalizing BART determinations, EPA must consider these quantifiable public benefits. **Contrary to arguments routinely advanced by industry, the Clean Air Act's visibility provisions do not simply protect aesthetic values.** Indeed, the very purpose of the Clean Air Act is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 7401(b)(1). Consideration of public health fits within the five factor BART analysis as a "non-air quality environmental impact." *Id.* § 7491(g)(2). And when Congress amended the Clean Air Act's visibility provisions, it made clear that the "overriding" and "paramount" of the Act was the protection of public health and welfare." *See* H.R. Conf. Rep. 95-564. Thus, EPA must take into account not only the benefits of its proposed BART controls, but also the adverse public health impacts from allowing BART-eligible sources in Texas to continue to operate without any meaningful pollution control.

We also note that Executive Order 12898 establishes federal executive policy to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. Similarly, Executive Order 13045 establishes a policy of evaluating and addressing any rule that: (1) Is determined to be economically significant as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. We agree that the FIP, as proposed, is not subject to either Executive Order because it will result in environmental and public health benefits to affected populations.

If EPA reverses course in its final rule, however, and concludes that the proposed SO<sub>2</sub> BART controls are unnecessary or not cost effective, EPA must conduct an analysis of the impacts of such a reversal on environmental justice populations and children. As Dr. Thurston's analysis demonstrates, emissions from these 18 EGUs impacts metropolitan areas throughout the central United States, including Houston, Dallas, Tulsa, Oklahoma City, and even Kansas City and Nashville. Thurston Health Report at Table 4. As Dr. Robert Bullard, the father of environmental justice, has observed, many of these communities have historically been disproportionately affected by harmful pollution from industrial sources, including electric power plants.<sup>33</sup> Given that those urban areas are likely to have higher populations of children, minority, and low-income populations, and given the history of

---

<sup>33</sup> *See* Decls. in Support of Sierra Club and NPCA's Response in Opposition to Motions to Stay, Decl. of Dr. Robert Bullard, *Texas v. EPA*, No. 16- 60118, at DEC 1-8 (5th Cir. Apr. 7, 2016) (ECF Doc. 00513457087) (attached).

disproportionate pollution impacts to these communities, EPA would be required to re-evaluate the impacts to those populations from a less protective rule pursuant to Executive Order 12898.

## **B. The Proposed FIP Will Result in Additional Economic Benefits.**

Requiring antiquated power plants and other sources to invest in modern pollution controls is a job-creating mechanism in itself, as each installation creates short-term construction jobs, as well as permanent operations and management positions.<sup>34</sup> As EPA has explained, installing BART “will require well-paid, skilled labor which can potentially be drawn from the local area and support local growth.” 77 Fed. Reg. 57,864, 57,909 (Sept. 18, 2012) (final Montana regional haze FIP).

Moreover, the regional haze program protects national parks and wilderness areas, which are of great natural and cultural value, in addition to serving as engines for sustainable local growth. A National Park Service study found that national park visitors contribute approximately \$30 billion to local economies and support 300,000 jobs, that every dollar invested in park operations generates about \$10 in local communities, and that every two Park Service jobs yield one job outside the parks.<sup>35</sup> Nearly 300 million people visit national parks every year, and communities near national parks enjoy greater-than-average economic growth due to the economic benefits of park visitors and related businesses.<sup>36</sup> Indeed, national parks attract businesses and individuals to the local area; the resulting economic growth in areas near national parks is 1 percent per year greater than statewide rates over the past three decades.<sup>37</sup>

Texas’s two national parks are important components of west Texas’s economy. In 2016 Big Bend and Guadalupe Mountains together generated over \$34 million for local economies

---

<sup>34</sup> Ceres, *New Jobs – Cleaner Air: Employment Effects Under Planned Changes to the EPA’s Air Pollution Rules* 1–3 (2011), <http://tools.ceres.org/resources/reports/new-jobs-cleaner-air/view> (attached). See also Decl. of William Steinhurst, *EME Homer City Generation v. EPA*, No. 11-1315 (D.C. Cir. Oct. 6, 2011) (ECF Doc. 1334068) (attached); Babcock & Wilcox, B&W Awarded Construction Contract For AEP SWEPSCO Power Plant in Arkansas, <http://www.babcock.com/en/news/bw-awarded-construction-contract-for-aep-swepsc-co-power-plant-in-arkansas> (attached).

<sup>35</sup> Daniel J. Stynes, Mich. State Univ., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010*, at page v (2011), <https://www.nature.nps.gov/socialscience/docs/NPSSystemEstimates2010.pdf> (attached); see also NPS, National Park System – Summary: 1990 to 2008 (in 2008, National Park Service units received over 274 million visits, accounting for over \$2.5 billion in expenditures and revenue), <ftp://ftp.census.gov/library/publications/2010/compendia/statab/130ed/tables/11s1251.pdf> (attached).

<sup>36</sup> See Jared Hardner & Bruce McKenney, Hardner & Gullison, *The U.S. National Park System, An Economic Asset at Risk* 5 (2006) (attached).

<sup>37</sup> *Id.*

and sustained 679 jobs.<sup>38</sup> Studies show that national park visitors highly value clean air and prioritize the enjoyment of beautiful scenery when visiting national parks.<sup>39</sup> Moreover, national park visitors readily perceive haze, enjoy their visit less when haze is bad, and are willing to cut short visits to national parks based on their perception of air quality.<sup>40</sup> See Decl. in Support of Mot. for Leave to Intervene by Sierra Club and NPCA, *Texas v. EPA*, No. 16-60118 (5th Cir. Mar. 10, 2016) (ECF Doc. 00513414795) (attached). A decrease in visits means less time and money spent in Texas's national parks and surrounding communities.

The regional haze program also provides important environmental benefits. In addition to impairing visibility, NO<sub>x</sub>, SO<sub>2</sub>, and PM pollution harm plants and animals, soil health, and entire ecosystems. NO<sub>x</sub> and SO<sub>2</sub> are the primary causes of acid rain, which acidifies lakes and streams and can damage certain types of trees and soils. Acid rain also accelerates the decay of building materials and paints, including irreplaceable buildings and statues that are part of our nation's cultural heritage.<sup>41</sup> In addition, nitrogen deposition—caused by wet and dry deposition of nitrates derived from NO<sub>x</sub> emissions—causes well-known adverse impacts on ecological systems. At times, nitrogen deposition exceeds “critical loads” beyond the tolerance of various ecosystems.<sup>42</sup> NO<sub>x</sub> is also a precursor to ozone, and ground-level ozone impacts plants and ecosystems by interfering with plants' ability to produce and store food, and increasing their susceptibility to disease and insects.<sup>43</sup>

Finally, in addition to delivering billions in direct annual economic benefits, by requiring the oldest and dirtiest sources of pollution to internalize their massive environmental and public health costs, the rule will help promote the increased development of renewable energy and associated economic benefits and sustainable jobs. Indeed, rural Texas communities have enjoyed significant economic, environmental, and public health benefits from the massive influx of wind energy generation in Texas, which has been driven, in part, by wind generation's increasing competitive advantage over coal-fired energy

---

<sup>38</sup> Nat'l Park Serv., *2016 National Park Visitor Spending Effects; Economic Contributions to Local Communities, States, and the Nation* (Apr. 2017), <https://www.nps.gov/subjects/socialscience/vse.htm> (attached).

<sup>39</sup> Abt Assocs. Inc., *Out of Sight: The Science and Economics of Visibility Impairment*, at ES-7 (2000), <http://www.abtassociates.com/reports/ES-clear.pdf> (attached).

<sup>40</sup> *Id.*

<sup>41</sup> EPA, Effects of Acid Rain, <https://www.epa.gov/acidrain/effects-acid-rain> (last updated on Mar. 2, 2017) (attached).

<sup>42</sup> See, e.g., William D. Bowman *et al.*, *Nitrogen Critical Loads for Alpine Vegetation and Soils in Rocky Mountain National Park*, 103 *Journal of Env'tl. Mgmt.* 165–71 (2012); NPS, *Nitrogen Deposition: Issues and Effects in Rocky Mountain National Park* (2005), [http://www.nps.gov/romo/parkmgmt/upload/romo\\_n\\_fact\\_final.pdf](http://www.nps.gov/romo/parkmgmt/upload/romo_n_fact_final.pdf) (attached); see also National Park Service, *NPS Critical Loads and Deposition*, <https://www.nature.nps.gov/air/Studies/criticalloads/> (attached).

<sup>43</sup> EPA, *Ground-level Ozone – Ecosystem Effects*, <https://www.epa.gov/ozone-pollution/ecosystem-effects-ozone-pollution> (last updated on Feb. 27, 2017) (attached).

generation.<sup>44</sup> In evaluating the final rule, EPA must consider these valuable benefits to Texas and the economy.

## DISCUSSION

### I. TO ASSURE COMPLIANCE WITH THE CLEAN AIR ACT'S VISIBILITY PROTECTION MANDATE, EPA MUST ISSUE A FEDERAL PLAN.

While Texas frequently criticizes the EPA for issuing federal plans in place of state-submitted plans under the Clean Air Act, the long history of Texas's inaction on BART, explained in detail below, reveals that there is absolutely no other course that EPA legally can take at this point. The Clean Air Act's regional haze program does provide states with the initial opportunity to develop regional haze plans. However, the deadline for Texas to submit a BART plan was December 17, 2007. 40 C.F.R. § 51.308(b). Texas has had years to develop its own plan but has failed to do so. A decade after the state's original deadline passed and five years after EPA disapproved Texas's only BART plan submission – which was based on a now-defunct emissions trading program – EPA has an urgent and mandatory duty to provide its own plan to protect the parks and people of Texas and surrounding states.<sup>45</sup> Moreover, as explained below, an EPA plan to address BART for SO<sub>2</sub> must at this point take the form of source-specific emission limits -- relying on a BART alternative such as the CSAPR trading program is no longer an option.

#### A. EPA's Mandatory Obligation to Issue a FIP to Satisfy the BART Requirement for Texas EGUs is Already Settled By Court Order.

Texas failed to submit a haze plan to EPA by the 2007 deadline in 40 C.F.R. § 51.308(b). In 2009, EPA published an official finding to that effect. 74 Fed. Reg. 2392 (Jan. 15, 2009). In response, Texas submitted a proposed haze plan to EPA.<sup>46</sup> In its plan, Texas did not require any pollution controls on BART-eligible sources, but instead stated that a separate federal emissions cap-and-trade program called CAIR could substitute for BART pursuant to the agency's regulations governing BART "alternatives." 40 C.F.R. § 51.308(e)(2). EPA already has disapproved the State's 2009 haze plan, *see* 77 Fed. Reg. 33,642, 33,653 (June 7, 2012), and EPA's disapproval is not at issue in this rulemaking. Once EPA disapproves a state plan, it must issue a federal plan within two years, unless EPA approves a corrected state plan, which EPA has

---

<sup>44</sup> *See* Decls. in Support of Sierra Club and NPCA's Response in Opposition to Motions to Stay, Decl. of Johnathan Hladik, *Texas v. EPA*, No. 16-60118, at DEC 23-25 (5th Cir. Apr. 7, 2016) (ECF Doc. 00513457087) (attached).

<sup>45</sup> 42 U.S.C. § 7410 (c)(1), (k)(3); *North Dakota v. EPA*, Nos. 12-1844, 12-1961, 12-2331, 2013 WL 5302700, at \*6–7 (8th Cir. Sept. 23, 2013); *Oklahoma v. EPA*, 723 F.3d 1201, 1207–10 (10th Cir. 2013); *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1600 (2014).

<sup>46</sup> TCEQ, Revisions to the State Implementation Plan (SIP) Concerning Regional Haze (hereinafter "2009 Texas Haze SIP"), [https://www.tceq.texas.gov/assets/public/implementation/air/sip/haze/2SIP\\_ado\\_rev.pdf](https://www.tceq.texas.gov/assets/public/implementation/air/sip/haze/2SIP_ado_rev.pdf); *see also* [https://www.tceq.texas.gov/airquality/sip/bart/haze\\_sip.html](https://www.tceq.texas.gov/airquality/sip/bart/haze_sip.html).

not done here.<sup>47</sup> Although EPA's duty to issue a FIP is settled, the history of CAIR and its successor, CSAPR provide a more complete understanding how EPA's proposal was forced by Texas's unwillingness to address its regional haze obligations.

EPA issued CAIR in 2005. That rule required 28 states, including Texas, to reduce emissions of SO<sub>2</sub> and NO<sub>x</sub> that significantly contribute to, or interfere with maintenance of, the 1997 National Ambient Air Quality Standard ("NAAQS") for ozone and PM<sub>2.5</sub>. 70 Fed. Reg. 25,162 (May 12, 2005). EPA subsequently determined that those states could also rely on CAIR's cap-and-trade emissions trading program to meet their obligations under the Regional Haze Rule to address BART for EGUs. 70 Fed. Reg. 39,104 (July 6, 2005).

The State of North Carolina and Texas utility Southwestern Public Services Company (owner of the Harrington plant at issue in this rulemaking), among others, challenged the CAIR rule in Court. In 2008, the D.C. Circuit remanded CAIR after finding it violated the CAA. *See North Carolina v. EPA*, 531 F.3d 896, 930 *modified by* 550 F.3d 1176, 1178 (D.C. Cir. 2008).

Despite the invalidation of CAIR, Texas submitted a SIP which relied on CAIR to satisfy the BART requirements for EGUs the following year. 2009 Texas Haze SIP at 9-1 ("Texas has made the determination that participation in CAIR is equivalent to BART. This exempts EGUs impacted by CAIR from a BART analysis for SO<sub>2</sub> and NO<sub>x</sub>."). TCEQ recognized that CAIR was unlawful. However, instead of conducting source-specific BART analyses, TCEQ stated that it "expects that a replacement program will be in place that makes comparable reductions in pollutants causing regional haze prior to 2018." 2009 Texas Haze SIP at ES-2; *id.* at 10-2 (reasonable progress goals "assume that either CAIR will remain in place or will be replaced by a comparable program to reduce visibility impairing pollution from EGUs in Texas and in the eastern United States"); *id.* at 9-1 (TCEQ "will take appropriate action if CAIR is not replaced with a system that the US EPA considers to be equivalent to BART").

In response to the D.C. Circuit's ruling invalidating CAIR, in 2012, EPA disapproved the haze plans of 14 states, including Texas, which had relied on CAIR to satisfy the BART requirements. 77 Fed. Reg. 33,642, 33,653 (June 7, 2012). This 2012 disapproval triggered EPA's mandatory duty to issue a federal plan addressing Texas's BART-eligible sources.<sup>48</sup> Despite its promise to take "appropriate action," the long-disapproved plan relying on CAIR is the *only* plan to address the BART requirement that Texas has submitted to EPA.

Because EPA already has issued a final disapproval of Texas's BART determinations for EGUs, and EPA has not approved a corrected state plan, the CAA requires EPA to issue a FIP. When EPA failed to issue a FIP or approve a corrected SIP by the two-year deadline in the statute, citizen groups sued EPA and obtained a court-ordered deadline for EPA to complete the rulemaking. EPA is under a court order to complete this rulemaking by September 9, 2017. *See*

---

<sup>47</sup> *See supra* note 45.

<sup>48</sup> Texas, Luminant, and others challenged this disapproval. That litigation is consolidated with challenges to EPA's "CSAPR Better than BART" rule. *Util. Air Regulatory Grp. v. EPA*, Nos. 12-1342 *et al.* (D.C. Cir. filed Aug. 6, 2012). However, none of those parties challenged the court order by the United States District Court for the District of Columbia setting forth EPA's mandatory duty to complete a FIP, or approve a SIP, by a date certain. *NPCA v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. Dec. 15, 2015) (ECF Doc. 86).



Order, *NPCA v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. Dec. 15, 2015) (ECF Doc. 86). EPA's mandatory obligation to issue a FIP in the absence of an approvable state plan has thus already been determined by the U.S. District Court for the District of Columbia. That decision was not appealed and cannot be revisited in this rulemaking.<sup>49</sup>

**B. The Complicated Procedural History of CAIR and CSAPR for Texas Does Not Relieve EPA of Its Mandatory Duty to Issue a Source-Specific BART FIP for Texas.**

Some industry opponents of the BART proposal have taken advantage of the complicated procedural history of CAIR and that of its successor CSAPR to obfuscate the fact that Texas has not submitted an approvable plan in the five years since EPA disapproved its plan to rely on CAIR. To clarify the scope of Texas's actions and, more importantly, inaction, we provide the full history below – including the many opportunities Texas has had to develop and refine its own plan to meet its statutory obligations under the Clean Air Act. This history provides essential background as to why it is both legally mandated and crucial for public health and the environment that EPA finalize its proposal to require modern pollution control standards for Texas's largest contributors to haze.

***1. Texas and Industry's Challenge to the Cross-State Air Pollution Rule***

Responding to the D.C. Circuit's 2008 decision to remand CAIR, EPA withdrew CAIR and issued a different emissions trading rule called CSAPR. 76 Fed. Reg. 48,208 (Aug. 8, 2011). As with CAIR, EPA issued a separate rule allowing states to rely on CSAPR as an alternative to BART for EGUs (the "CSAPR-Better-than-BART Rule"). 77 Fed. Reg. 33,642 (June 7, 2012).<sup>50</sup> Separately, in a December 2014 Texas-specific proposal, EPA had proposed to satisfy its statutory duty to issue a federal plan for Texas BART by replacing CAIR with CSAPR for BART-eligible sources. 81 Fed. Reg. at 301-302.

Despite the opportunity presented by EPA to "streamline" compliance with BART, the State of Texas and nearly all the Texas power plant owners who are now impacted by the proposed BART rule (American Electric Power-Southwest Power Company, Luminant, and Southwestern Public Service Company) challenged CSAPR in the D.C. Circuit, arguing that Texas sources were not contributing significantly to interstate pollution problems and that EPA

---

<sup>49</sup> Texas did conduct a BART analysis for PM, unlike for NO<sub>x</sub> and SO<sub>2</sub>. However, we agree with EPA that "Texas' screening analysis is no longer reliable or accurate because of the invalid assumption that source-by-source BART for either SO<sub>2</sub> or NO<sub>x</sub> would not be required. In order to appropriately evaluate the BART requirements for EGUs, the visibility impacts from all pollutants must be studied, including PM emissions. Texas' PM BART analysis for EGUs does not do this." 82 Fed. Reg. at 917-18. As discussed below, we do not agree with EPA that BART for NO<sub>x</sub> is satisfied by Texas's participation in CSAPR for annual NO<sub>x</sub>.

<sup>50</sup> Sierra Club, NPCA, and others have challenged this conclusion, with litigation currently pending in the D.C. Circuit. *See* Conservation Groups' Opening Brief, *Util. Air Regulatory Grp. v. EPA*, No. 12-1342 (D.C. Cir. Mar. 17, 2017) (ECF Doc. 1666640) (attached).

did not have authority to impose any caps on NO<sub>x</sub> or SO<sub>2</sub> emissions in Texas.<sup>51</sup> After protracted litigation that included the Supreme Court generally upholding CSAPR but remanding the rule back to the D.C. Circuit for as-applied challenges related to certain states, in July 2015, the D.C. Circuit ultimately invalidated and remanded the CSAPR emission budgets for four states, including Texas. *EME Homer City II*, 795 F.3d 118.

Specifically, the D.C. Circuit addressed EPA's decision to base the CSAPR SO<sub>2</sub> budget for Texas and three other states' sources on the reductions that could be achieved using a \$500-per-ton cost threshold. The Court agreed with the four states challenging their budgets that because modeling in the rulemaking record from the CSAPR proposal indicated that air quality problems at all PM<sub>2.5</sub> receptors linked to these four states could have been resolved at SO<sub>2</sub> control costs below \$500 per ton, the Phase 2 SO<sub>2</sub> budgets set in the CSAPR final rule may be more stringent than necessary to address the four states' PM<sub>2.5</sub> transport obligations. The court therefore found the Phase 2 SO<sub>2</sub> budgets for these four states invalid and remanded them to the EPA for reconsideration. *Id.* at 128–29; *see* 81 Fed. Reg. at 78,958.

With respect to Texas, the D.C. Circuit determined that “by requiring Texas to implement pollution controls available at \$500/ton when controls in all contributing upwind States at \$100/ton would bring Madison into attainment, EPA had required Texas ‘to reduce emissions by more than the amount necessary to achieve attainment in every downwind State to which it is linked,’ in clear violation of the Supreme Court’s directive.” *EME Homer City II*, 795 F.3d at 129 (quoting *EME Homer*, 134 S. Ct. at 1608).<sup>52</sup> As a result of the D.C. Circuit’s decision that the Texas CSAPR budgets were unlawful, EPA determined that it could not rely on CSAPR as an alternative to BART for Texas EGUs. 81 Fed. Reg. at 302. EPA noted it would address BART as needed in a later rulemaking. *Id.*

In sum, although EPA would have permitted Texas to rely on CSAPR’s modest cap-and-trade program to avoid source-specific BART controls, Texas, Luminant, AEP, and SPS all chose to challenge CSAPR. They were ultimately successful in defeating EPA’s inclusion of Texas in the program for SO<sub>2</sub> and ozone-season NO<sub>x</sub>. Ever since the D.C. Circuit remanded the

---

<sup>51</sup> In the CSAPR litigation, Luminant stated that “EPA’s own findings establish it lacked authority to regulate Texas at all under §110(a)(2)(D)(i)(I)” because Texas’s contribution to downwind nonattainment was purportedly linked to one monitor in Madison, IL, and EPA later concluded, “based on real-world monitoring data, that Madison has achieved attainment of PM<sub>2.5</sub> standards by a substantial margin . . . Texas is thus not ‘contributing’ to ‘nonattainment.’” Indeed, EPA projected that even absent new regulatory intervention, Texas EGU emissions would decrease from 2010 levels . . . Where an area is in attainment today and emissions from an upwind State are decreasing even in the absence of regulation, there can be no basis for concluding that sources within the State will ‘contribute significantly’ to ‘nonattainment’ or that drastic emissions reductions are necessary for attainment.” Luminant Mot. to Stay, *EME Homer City Generation v. EPA*, No. 11-1315, at 23-24 (D.C. Cir. Sept. 15, 2011) (ECF Doc. 1329866) (attached).

<sup>52</sup> On remand, EPA determined that “although the court’s decision specifically remanded only Texas’ SO<sub>2</sub> budget, the court’s rationale for remanding that budget also implicates Texas’ annual NO<sub>x</sub> budget.” 81 Fed. Reg. at 78,955.

Texas NO<sub>x</sub> and SO<sub>2</sub> budgets to EPA in July 2015, Texas has been on notice that source-specific BART could well be necessary to meet its BART obligations. Yet Texas has not put forward either a new interstate transport SIP to replace CSAPR or a new BART SIP to address the Regional Haze Rule.

## **2. *Texas's Rejection of EPA's Offer to Avoid BART By Voluntarily Joining CSAPR***

On June 27, 2016, EPA issued a memorandum emphasizing that states with invalidated CSAPR budgets may voluntarily adopt CSAPR budgets. Mem. from J. McCabe, Acting Assistant Administrator, EPA to Regional Air Division Directors, *Re: The USEPA's Plan for Responding to the Remand of the Cross-State Air Pollution Rule Phase 2 SO<sub>2</sub> Budgets for Alabama, Georgia, South Carolina, and Texas* (June 27, 2016) (attached) [hereinafter, "McCabe Mem."]. The memo directs the Regional Air Division Directors to share the memo with state officials. EPA also communicated orally with officials in Texas in advance of the memo. 81 Fed. Reg. 78,954, 78,959 n.35.

In the memo, EPA made clear that it "*does not currently have an analytical basis to support new CSAPR budgets*" in a federal rule. McCabe Mem. at 2-3 (emphasis added); *see also* Supplemental Notice by EPA Regarding EPA's Schedule For Completing Final Action On A Good Neighbor Federal Implementation Plan For Texas With Respect To The 1997 PM<sub>2.5</sub> Standards, *Sierra Club v. EPA*, No. 1:10-CV-01541-CKK, at ¶¶ 1-2, 4 (D.D.C. Dec. 5, 2016) (ECF Doc. 87) (attached). Nevertheless, "EPA has made it a priority to ensure the ability of all states that participate in CSAPR without remanded budgets to continue to rely on CSAPR participation as a BART alternative." McCabe Mem. at 2. "EPA has also engaged with the four states with remanded budgets to continue to allow them to rely on CSAPR participation as a BART alternative as efficiently and expeditiously as possible." *Id.*

Specifically, EPA set forth two potential paths for states that had intended to rely on CSAPR to satisfy their BART obligations, but whose inclusion in the CSAPR program was no longer legally supportable. First, a state could submit a SIP revision showing that its sources are required to participate in the CSAPR SO<sub>2</sub> and annual NO<sub>x</sub> trading programs at budget levels no less stringent than those codified in the CSAPR regulations. Alternatively, if the state did not choose to participate in CSAPR, EPA indicated it would withdraw the CSAPR FIP for the state and address any remaining interstate transport or regional haze obligations for the state on a state-by-state basis. EPA warned that, following final action withdrawing the FIPs, the state's sources would no longer be required to participate in those trading programs, and "*the removed state will no longer have the opportunity to rely on CSAPR participation as a BART alternative for SO<sub>2</sub>.*" *Id.* at 4 (emphasis added).

Unlike all of the other states presented with this option, Texas rejected EPA's invitation to require, as a matter of state law, that sources participate in CSAPR. As explained by EPA in August 2016 in pleadings filed in a deadline case relating to its obligations to address interstate pollution, "EPA consulted with each of the four states subject to remanded CSAPR Phase 2 SO<sub>2</sub> budgets (Alabama, Georgia, South Carolina, and Texas) as to which option outlined in the McCabe Memorandum each state would choose. Texas conveyed that it was not choosing the option of voluntarily adopting the remanded budgets into its SIP, whereas the three other states

opted to voluntarily continue participating in CSAPR trading programs for SO<sub>2</sub> and annual NO<sub>x</sub> by adopting the existing CSAPR budgets for those pollutants pursuant to approved SIP revisions.”<sup>53</sup>

Even if Texas were, as a factual matter, willing to voluntarily incorporate EPA’s invalidated CSAPR emission budgets into its SIP, the state cannot, as a legal or practical matter, simply opt in and avoid source-specific BART. First, in light of the D.C. Circuit’s conclusion that the Texas CSAPR budgets are more stringent than necessary under the Clean Air Act, Texas cannot simply turn around and adopt those budgets. Under Texas law, before TCEQ may adopt any major environmental rule that exceeds the requirements of federal law, the agency must first conduct a detailed regulatory analysis, provide for notice and comment, respond to all comments, prepare a final regulatory analysis, and then provide an opportunity for administrative appeal. Tex. Code Ann. § 2001.0225. Having challenged CSAPR as unlawful and unnecessary as a matter of law, TCEQ cannot reverse course and assert that the benefits outweigh the costs for the purposes of state law. Not only would such a reversal of position be legally untenable, but it is also exceedingly unlikely that Texas could conduct the necessary review and appeal process, and then implement CSAPR and achieve “all necessary emission reductions . . . during the period of the first” haze SIP, as required under the Regional Haze Rule. 40 C.F.R. § 51.308(e)(2)(iii). Because Texas cannot reverse course and adopt emissions budgets that it demonstrated were unnecessary, as a matter of law, and because the agency cannot achieve “all” of the CSAPR reductions by 2018 (the end of the first planning period), it cannot voluntarily adopt CSAPR.

### *3. EPA Withdrawal of Texas from CSAPR*

After having given Texas four months’ notice of its intent to fully withdraw the state from the CSAPR program, and made clear the implication that there would no longer be any doubt that Texas sources would need to comply with source-specific BART obligations, EPA formally issued its proposal to withdraw its federal plan to include Texas in the CSAPR emissions trading program one month before issuing the BART proposal. 81 Fed. Reg. 78,954 (Nov. 10, 2016). EPA again made clear the situation: “[I]f and when this [CSAPR withdrawal] proposal is finalized, Texas will no longer be eligible to rely on CSAPR participation as an alternative to certain regional haze obligations including the determination and application of source-specific SO<sub>2</sub> BART. Any such remaining obligations are not addressed in this proposed action and would be addressed through other state implementation plan (SIP) or FIP actions as

---

<sup>53</sup> Supplemental Notice by EPA Regarding EPA’s Schedule For Completing Final Action On A Good Neighbor Federal Implementation Plan For Texas With Respect To The 1997 PM<sub>2.5</sub> Standards, No. 1:10-cv-01541-CKK, at 3 (D.D.C. Dec. 5, 2016) (ECF Doc. 87) (attached). *See also* 81 Fed. Reg. 59,869 (Aug. 31, 2016); Letter from Judson H. Turner, Georgia Department of Natural Resources, Docket ID No. EPA-HQ-OAR-2016-0598-0006, at 2 (May 26, 2016); Letter from Myra C. Reece, South Carolina Department of Health and Environmental Control, Docket ID No. EPA-HQ-OAR-2016-0598-0007, at 1 (Apr. 19, 2016).

appropriate.” *Id.* at 78,956. EPA has informed the U.S. District Court for the District of Columbia that it intends to finalize this proposal by October 31, 2017.<sup>54</sup>

After challenging the state’s inclusion in CSAPR for years, industry has done an about-face in response to EPA’s Texas BART Proposal and now *opposes* EPA’s withdrawal of Texas from CSAPR. At EPA’s January 10, 2017 public hearing on the proposal, one industry advocate urged that EPA should have “develop[ed] a legally compliant [CSAPR] budget for Texas which would then have sufficed for BART compliance” instead of “remov[ing] Texas from the CSAPR annual programs altogether.”<sup>55</sup> But EPA has gone on record that the agency “*does not currently have an analytical basis to support new CSAPR budgets*” for Texas. McCabe Mem. at 2-3 (emphasis added). As EPA has noted, there was no such thing as a legally compliant CSAPR budget for Texas following the remand.<sup>56</sup> That is surely what the State of Texas would argue if EPA were to try to keep the state *in* the program following remand. Texas has had many years to submit a state SIP equivalent to CSAPR or other BART alternative to avoid source-specific BART, but Texas has taken no action to address its contribution to interstate pollution or regional haze.<sup>57</sup>

**C. Even if Texas Were to Remain in the Federal CSAPR Program or Adopt Similar State Emission Caps, EPA Must Finalize its Source-Specific BART Proposal for SO<sub>2</sub>.**

Sierra Club, NPCA, and Earthjustice have strongly opposed the CSAPR-Better-than-BART rule since its inception. We continue to maintain that it is unlawful and unsupported by the scientific record and incorporate those arguments here.<sup>58</sup> Legal challenges to EPA’s rule which purports to authorize reliance on CSAPR to satisfy BART are currently pending in the D.C. Circuit Court of Appeals. Until the D.C. Circuit rules on the validity of the CSAPR-Better-than-BART rule, neither EPA nor Texas should assume that CSAPR is an appropriate substitute for BART. We discuss this below and further in Section VI.

In addition to the legal uncertainty surrounding the national CSAPR-Better-than-BART rule, it is too late for Texas to rely on a BART alternative like CSAPR or any other program. Under EPA’s Regional Haze Rule, any BART *alternative* must include a “requirement that all necessary emission reductions take place during the period of the first long-term strategy for

---

<sup>54</sup> Notice by EPA Regarding EPA’s Schedule For Completing Final Action on a Good Neighbor Federal Implementation Plan for Texas With Respect to the 1997 PM<sub>2.5</sub> Standards, *Sierra Club v. EPA*, No. 1:10-cv-01541-CKK (D.D.C. Apr. 25, 2017) (ECF Doc. 91).

<sup>55</sup> Transcript of January 10, 2017 Public Hearing on EPA’s Clean Air Plan Proposal for Texas Regional Haze, Docket ID No. EPA-R06-OAR-2016-0611-0057, at 22.

<sup>56</sup> McCabe Mem. at 2-3.

<sup>57</sup> As explained by EPA, “nothing in the court’s decision affects the states’ authority to seek incorporation into their SIPs of state-established budgets as stringent as the remanded federally-established budgets or limits the EPA’s authority to approve such SIP revisions.” 81 Fed. Reg. at 78,959 n.36 (citing CAA sections 116, 110(k)(3)).

<sup>58</sup> See Conservation Groups’ Opening Brief, *Util. Air Regulatory Grp. v. EPA*, No. 12-1342 (D.C. Cir. Mar. 17, 2017) (ECF Doc. 1666640) (attached).

regional haze”—*i.e.*, no later than 2018. *See* 40 C.F.R. § 51.308(e)(2)(iii); *Yazzie v. EPA*, No. 14-73100, Slip. Op. at 5, 11, 17, 19 (9th Cir. Mar. 22, 2017).<sup>59</sup> There are no plans in place, or even in development, for any federal or state program that would ensure the necessary reductions take place by the end of the first planning period in 2018.

With the exception of a BART alternative approved for the Navajo Generating Station, which relied on the Tribal Authority Rule to provide additional flexibility,<sup>60</sup> EPA has never proposed or approved a BART alternative that would allow the necessary emission reductions to be delayed past 2018.<sup>61</sup> In *Texas v. EPA*, 829 F.3d 405 (5th Cir. 2016), Texas and industry persuaded the Fifth Circuit of a likelihood that EPA could not require controls beyond the first planning period for reasonable progress. *Id.* at 429-30. While neither the statute nor regulation precludes emission reductions relative to *reasonable progress requirements* to occur beyond the planning period deadline, the *BART alternative requirements* contain a provision directly on point. Accordingly, emission reductions under a BART alternative must be implemented by the end of the first planning period. 40 C.F.R. § 51.308(e)(2)(iii).

Even if the timing were not prohibitive, if EPA were to include Texas in CSAPR, but set a higher (more lenient) SO<sub>2</sub> budget for Texas than in the original CSAPR rule, EPA could not rely on the CSAPR-Better-than-BART Rule. If Texas sources were authorized to emit more SO<sub>2</sub> than they were authorized to emit under the original CSAPR rule, the assumptions underlying EPA’s demonstration that the original CSAPR Rule made greater reasonable progress than BART would no longer be valid. In that case, EPA would have to reanalyze whether CSAPR makes greater reasonable progress than BART, and would have to demonstrate this as fact in a revised CSAPR-Better-than-BART Rule. This is but one issue with application of CSAPR SO<sub>2</sub> budgets in Texas.<sup>62</sup>

---

<sup>59</sup> The same is not true of source-specific BART itself. Thus, *compliance* alternatives with *source-specific BART* are permitted to extend past the first planning period.

<sup>60</sup> The TAR exempts tribes from “specific visibility implementation plan submittal deadlines established under section 169A of the Act,” 42 U.S.C. § 7491. 40 C.F.R. § 49.4(e).

<sup>61</sup> *See, e.g.*, 80 Fed. Reg. 19,220 (Apr. 10, 2015) (final approval of Arizona Apache BART Alternative); 79 Fed. Reg. 52,420 (Sept. 3, 2014) (final approval of Arizona BART Alternative for Sundt Unit 4); 79 Fed. Reg. 33,438 (June 11, 2014) (final rule, FIP for Tesoro Refining and Intalco Refinery BART Alternatives); 77 Fed. Reg. 76,871 (Dec. 31, 2012) (final approval of Colorado BART Alternative); 77 Fed. Reg. 39,938, 39,940-1 (July 6, 2012) (final approval of Maryland BART Alternative).

<sup>62</sup> *See* Conservation Groups’ Opening Brief, *Util. Air Regulatory Grp. v. EPA*, No. 12-1342 (D.C. Cir. Mar. 17, 2017) (ECF Doc. 1666640) (attached); Letter from David Baron to EPA, Docket ID No. EPA-HQ-OAR-2016-0598-0014 (Jan. 9, 2017) (attached); Letter from Abigail Dillen, Docket No. EPA-HQ-OAR-2011-0729 (Mar. 27, 2012) (attached); Letter from McCrystie Adams to EPA, Docket No. EPA-HQ-OAR-2011-0729 (Feb. 28, 2012) (attached); Letter from Jocelyn D’Ambrosio to EPA, Docket No. EPA-HQ-OAR-2011-0729 (Feb. 28, 2011) (attached); D. Howard Gebhart, Technical Review of US Environmental Protection Agency Dispersion Modeling Supporting the “Transport Rule is Better than BART” Analysis, Docket No. EPA-HQ-OAR-2011-0729 (Feb. 21, 2012) (attached).

Adopting an emissions trading program for Texas that allows anywhere close to the tonnage of SO<sub>2</sub> permitted by the emissions caps in CSAPR would also fail to meet the substantive requirements for a BART alternative. While the D.C. Circuit is considering whether CSAPR meets these substantive requirements in the CSAPR-Better-than-BART litigation, **Texas's situation is unique in that EPA has actually completed a source-specific BART proposal that can be directly compared with the CSAPR program.** Thus, even if the CSAPR-Better-than-BART rule is upheld as a national rule that EPA has the option of relying upon in certain states, and even if Texas were to join CSAPR or voluntarily adopt its budgets, it would be arbitrary for EPA to rely on CSAPR as a BART alternative without actually comparing the CSAPR or CSAPR-like program with its BART proposal. When comparing the two head-to-head, it is obvious as a practical matter that allowing Texas's coal-fired power fleet to essentially continue emitting the same levels of SO<sub>2</sub> as the status quo is not going to achieve equivalent visibility gains as the BART proposal would. As detailed in "EPA's Fact Sheet for the Open House on EPA's Clean Air Plan Proposal for Texas Regional Haze" (attached), the proposed BART limits are expected to reduce emissions of SO<sub>2</sub> from 16 EGUs and would cut emissions from approximately 89 to 98 percent – a reduction of over 194,000 tons of SO<sub>2</sub> every year.

To satisfy the requirements for a BART "alternative," an emissions trading program must make a technical demonstration that the trading program "will achieve greater reasonable progress [towards natural visibility] than would have resulted from the installation and operation of BART at all sources subject to BART." *Id.* § 51.308(e)(2)(i). Under EPA's regulations, if the distribution of emissions is different under an alternative program, a state "must conduct dispersion modeling" to determine differences in visibility between BART and the trading program for each impacted Class I area, for the worst and best 20 percent of days. The modeling only demonstrates "greater reasonable progress" if both of the following two criteria are met: (i) Visibility does not decline in any Class I area, and (ii) There is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas. *Id.* § 51.308(e)(3).

As our organizations have argued in the CSAPR-Better-Than-BART litigation, and as is intuitively clear, neither criterion would be met by any BART alternative that allows anywhere close to the tonnage of SO<sub>2</sub> permitted by the emissions caps in CSAPR. The distribution of emissions would be vastly different between the two programs. The units controlled by the BART proposal would not need to reduce SO<sub>2</sub> emissions pursuant to a CSAPR or CSAPR-like cap because the limit on the total state's emissions is well above what the state's units are already emitting. Although some individual units may need to reduce emissions, the glut of emissions allowances in the trading market have historically kept prices extremely low. SO<sub>2</sub> allowance prices are only a few dollars a ton.<sup>63</sup> Accordingly, it would make no economic sense for a plant owner to invest in pollution controls that cost in the millions of dollars instead of buying pollution allowances from another plant that does not need them. **Given the large amount of headroom between the Texas state budget for SO<sub>2</sub> in CSAPR and plants' current emission levels, many plants that would reduce their SO<sub>2</sub> emissions by 98% or**

---

<sup>63</sup> S&P Global, *Allowance pricing unchanged in still-quiet CSAPR emissions market* (June 16, 2016), <https://www.platts.com/latest-news/coal/houston/allowance-pricing-unchanged-in-still-quiet-csapr-21734092> (attached).

**more under the BART proposal would be emitting at their current levels under CSAPR -- resulting in a vastly different “distribution of emissions” between the two programs.**

The difference between the overall improvement in visibility under the BART proposal and an emissions trading program like CSAPR is also enormous. Because CSAPR would not be expected to result in *any* reductions in emissions, the total cumulative visibility benefit of the BART proposal represents the difference in progress towards natural visibility between the two programs. It would be absurd to conclude that CSAPR makes “greater reasonable progress” under these facts. Therefore even if the CSAPR-Better-than-BART rule survives challenge in the D.C. Circuit, as applied as a BART alternative in Texas, the approach does not clear the statutory and regulatory source specific BART exemption hurdle. 42 U.S.C. § 7491 (c); 40 C.F.R. § 51.308(e)(2).

Even if the state were to voluntarily subscribe to CSAPR SO<sub>2</sub> budgets that result in emission reductions on par with BART, doing so could only be a legitimate option if the implementation plan were to incorporate source specific geographic enhancements so that the issues discussed above do not equate to continued degradation in air quality in the regions Class I areas. 40 C.F.R. § 51.308(e)(2)(v). The geographic enhancement provision is the mechanism to ensure that to the extent a BART alternative is to progress it be joined by source specific requirements to guard against pollution hotspots.

**In sum, no further delay of implementing source-specific BART in Texas is warranted on any account.** As EPA noted in its proposal,

The Texas Regional Haze SIP stated, ‘The TCEQ will take appropriate action if CAIR is not replaced with a system that the US EPA considers to be equivalent to BART.’ BART determinations were due in SIP submissions on December 17, 2007, 40 CFR 51.308(b), putting them on a timeline for controls by 2014 (considering the deadline for SIP action at CAA section 110(k)(2) and allowing five years for installation of BART controls). Additional delay of any amount is not appropriate and not consistent with the law.

82 Fed. Reg. at 917 n.34.

## **II. EPA’S PROPOSED SCRUBBER RETROFITS AND UPGRADES ARE REASONABLE AND LAWFUL.**

EPA should finalize its proposal to require new scrubbers at 14 coal units and scrubber upgrades at 4 additional coal units, as these are the only controls which would satisfy the BART requirements. Twelve of these units have operated for decades without installing any post-combustion controls for SO<sub>2</sub>.<sup>64</sup> **EPA’s analysis in the proposed rule indicates that new scrubbers would dramatically improve visibility at a reasonable cost and meet the other**

---

<sup>64</sup> Fayette Units 1 and 2 recently installed wet scrubbers. Of the 14 units for which EPA proposes to set BART limits based on the use of new scrubbers, only the two Fayette units have already installed scrubbers.



**BART factors.** Sensitivity analyses we conducted show that, even if costs are calculated using data from different years or using different assumptions, all of the proposed retrofits are cost-effective.

**The scrubber upgrades are a bargain: they significantly improve visibility for approximately \$1000 per ton or less, which is a fraction of the cost of most SO<sub>2</sub> BART controls.** As with EPA's analysis of new scrubbers, EPA's analysis of scrubber upgrades make conservative assumptions about scrubber performance, and the 4 units could likely meet even more stringent limits than what EPA has proposed.

**EPA should have evaluated coal switching or coal blending in combination with post-combustion controls.** Indeed, many of the lignite-fired EGUs in Texas are already blending with lower sulfur subbituminous coal and could increase the amount of lower sulfur coal used. For the EGUs fueled by Powder River Basin coal, there may be lower sulfur coals available. With use of lower sulfur coal, the operational costs of add-on controls could be lower and any energy and non-air quality environmental impacts could be lessened. Blending of lower sulfur coal, however, may only be considered in conjunction with, rather than as a substitute for, add-on controls that are cost effective.

**EPA correctly rejects DSI as BART.** Based on information submitted by Luminant, EPA previously concluded that DSI is not technically feasible at Big Brown and Monticello, and EPA correctly reached the same conclusion in this proposal. For plants where DSI is technically feasible, EPA's consideration of DSI at 80-90% removal rates has no rational basis. The evidence from affected utilities, the consultant who contributed to EPA's Integrated Planning Model, and the Air Markets Database indicate that these Texas units cannot achieve 80-90% removal rates with DSI. As a result, the only feasible DSI removal rate which EPA considered is 50%. But if DSI were to achieve only a 50% removal rate, it could not come close to achieving the 95% removal rate required by presumptive BART. Moreover, new scrubbers have a cost-effectiveness only slightly higher than DSI, yet improve visibility far more than DSI would. Thus, there is no basis in the record supporting DSI as BART.

While we do not oppose providing a mechanism for utilities to request a different emission limit for the scrubber upgrades, EPA should modify and clarify the terms of this proposal. EPA should confirm that any such proceeding would be a FIP revision, subject to the full procedural requirements of any FIP provision under the Clean Air Act, including public notice and comment. EPA should reiterate that the outcome of the process could be a lower limit, or no change at all. And EPA's consideration of any such request must include a full five-factor BART analysis.

Finally, **EPA should determine that SO<sub>2</sub> BART requires that all of the gas-fired units which occasionally burn oil use only ultra-low-sulfur diesel when they burn oil.** Given that these units burn a small amount of oil annually, the incremental cost to switch to ultra-low-sulfur diesel is very small—between \$9,000 and \$19,000 per year, depending on the price of oil one assumes. The actual cost may be zero, because in response to such a BART requirement, these gas-fired units may simply discontinue the use of oil and burn gas all of the time. At a

minimum, EPA should impose this requirement for the Stryker and Graham units, given that doing so would lead each unit to reduce its visibility impact at a Class I area by more than 0.5 dv.

**A. EPA's Analysis Indicates that All Five BART Factors Weigh in Favor of the Scrubber Retrofits and Upgrades.**

Consideration of the five statutory BART factors compels the conclusion that new scrubbers are BART for the plants lacking controls for SO<sub>2</sub> and that scrubber upgrades are BART for the plants with older, poorly performing scrubbers.

**1. Scrubber Retrofits**

For the following 12 coal-fired units which currently have no post-combustion controls, EPA proposed to require new scrubbers as BART: Big Brown 1 and 2, Coletto Creek 1, Harrington 61B and 62B, JT Deeley 1 and 2, Monticello 1 and 2, WA Parish 5 and 6, and Welsh 1. 82 Fed. Reg. at 946.<sup>65</sup> EPA proposed BART limits based on the use of a dry scrubber at the Harrington units and limits based on the use of a wet scrubber at all of the other units.

The Clean Air Act requires that five factors be considered in determining BART: the costs of compliance, the energy and nonair quality environmental impacts of compliance, any existing controls in use at the source, the remaining useful life of the source, and the expected visibility improvement from controls. 42 U.S.C. § 7491(g)(2). Consideration of the second through fourth factors is virtually identical for these twelve units; thus, we discuss those factors for the twelve units together.

The energy and nonair quality environmental impacts of new wet scrubbers and dry scrubbers are minimal. As explained in the accompanying Stamper Report, scrubbers require some parasitic load, as do many pollution controls, but the incremental electricity usage is relatively small. Stamper Report at 66-67.

While operation of a scrubber requires water, at least 35 power plants operate wet scrubbers in arid regions receiving less than 20 inches of precipitation a year. Stamper Report at 67-68. We are not aware of any BART determination in which a scrubber was rejected based on water use, even in areas with limited water supplies. For example, EPA concluded that a scrubber would be both feasible and reasonable to require for the two-unit, 1365 MW Gerald Gentleman Station in Nebraska, even though the utility would have to acquire new water rights. See 77 Fed. Reg. 40,150, 40,162 (July 6, 2012) (concluding that wet FGD would cost slightly more than \$3000 per ton, and dry FGD approximately \$2000 per ton, including the cost to obtain water rights). In sum, the environmental impacts of new scrubbers would be minimal and would be far outweighed by the environmental benefits of reducing tens of thousands of tons of harmful SO<sub>2</sub> pollution.

---

<sup>65</sup> As mentioned above, *supra* note 65, EPA also proposed BART limits for Fayette Units 1 and 2 based on the use of scrubbers. We support this proposal but do not discuss the Fayette units because they have already installed wet scrubbers and are achieving the emission rate of 0.04 lb/MMBtu that EPA proposes.

Each of the twelve units has no post-combustion controls for SO<sub>2</sub>.

With respect to the remaining useful life of the sources, the only plant which has announced a shutdown date is Welsh Unit 2. For the other six plants, there is no publicly available information suggesting that the plants intend to close. Moreover, none of the other six plants have legally enforceable requirements to close by a date certain. Accordingly, EPA properly used a 30-year remaining useful life for the plants (except for Welsh Unit 2), 82 Fed. Reg. at 930, 938.

The cost-effectiveness of the controls and the expected visibility benefits are provided in the table below.

<b>Unit</b>	<b>Control Technology</b>	<b>EPA's Cost-Effectiveness Estimate in Proposed Rule, Using 2011-2015 Data \$/ton<sup>66</sup></b>	<b>EPA's Estimate of Expected Visibility Improvement at Most Impacted Area, dv<sup>67</sup></b>	<b>EPA's Estimate of Cumulative Visibility Improvement, dv<sup>68</sup></b>
Big Brown 1	Wet FGD	1,189	1.909	12.728
Big Brown 2	Wet FGD	1,127	1.940	12.924
Coletto Creek 1	Wet FGD	2127	0.668	5.233
Harrington 061B	SDA	3909	1.170	4.832
Harrington 062B	SDA	4180	1.279	5.379
JT Deeley 1	Wet FGD	3898	0.487	4.785
JT Deeley 2	Wet FGD	3712	0.298	3.650
Monticello 1	Wet FGD	2718	3.783	12.708
Monticello 2	Wet FGD	3031	3.924	13.025
WA Parish 5	Wet FGD	2417	1.518	8.171
WA Parish 6	Wet FGD	2259	1.492	7.979
Welsh 1	Wet FGD	3924	1.521	4.683

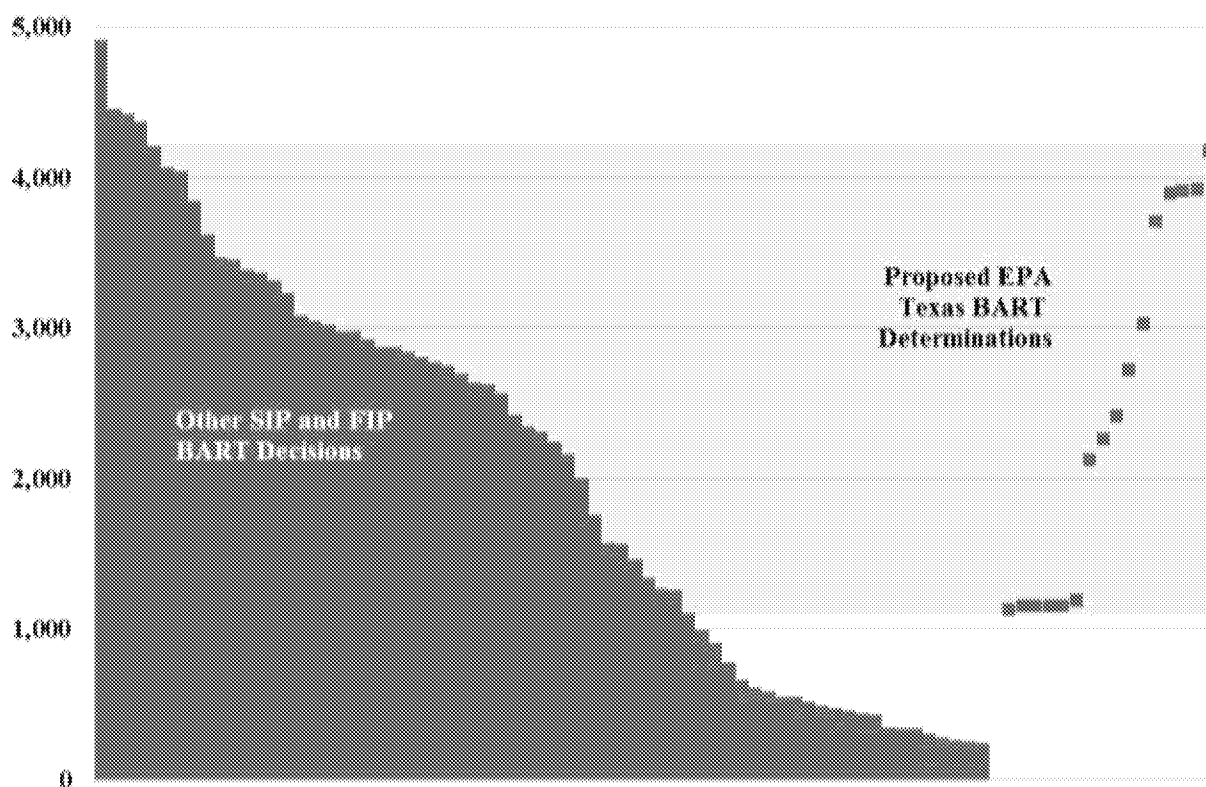
For each unit, the cost-effectiveness of a new scrubber is well within the range of cost-effectiveness values for final BART determinations issued or approved by EPA, as the chart below indicates.

<sup>66</sup> 82 Fed. Reg. at 926-27.

<sup>67</sup> *Id.* at 931 (Table 15).

<sup>68</sup> *Id.* at 940 (Table 22) – 944 (Table 31),

**Figure 1: Cost Effectiveness of BART Determinations (\$/ton)\*<sup>69</sup>**



\*Proposed determinations include both scrubber retrofits and scrubber upgrades. \$/ton value for other BART determinations has not been adjusted to 2016\$.

Many of the proposed retrofits are reasonable even under the State of Texas's cost-effectiveness threshold. In its SIP submission, the State of Texas used \$2700 per ton as the threshold for cost-effectiveness controls for reasonable progress. *See Texas Commission on Environmental Quality, Revisions to the State Implementation Plan Concerning Regional Haze at 10-7 (2009) [hereinafter, "Texas SIP Submission"]*.<sup>70</sup> Here, using EPA's cost-effectiveness numbers, new scrubbers would cost less than \$2700 per ton at Big Brown 1 and 2, Coletto Creek 1, Monticello 1 and 2, and WA Parish 5 and 6. Thus, EPA's proposed BART determinations are within the range of costs that Texas deemed cost effective.<sup>71</sup>

<sup>69</sup> "Cost Effectiveness and Visibility in BART Determinations" spreadsheet and related documents (attached).

<sup>70</sup> [https://www.tceq.texas.gov/assets/public/implementation/air/sip/haze/2SIP\\_ado\\_rev.pdf](https://www.tceq.texas.gov/assets/public/implementation/air/sip/haze/2SIP_ado_rev.pdf). Adjusting Texas's threshold to \$2016 yields an updated value of \$3,210/ton. *See Stamper Report* at 53.

<sup>71</sup> Moreover, it should be noted that EPA found in the reasonable progress FIP for Texas that if the \$2,700/ton cost-effectiveness threshold was escalated to 2014 dollars, the cost threshold would be closer to \$3,448/ton. EPA, Response to Comments for the Federal Register Notice for the Texas and Oklahoma Regional Haze State Implementation Plans; Interstate Visibility Transport State Implementation Plan to Address Pollution Affecting Visibility and Regional Haze; and Federal Implementation Plan for Regional Haze, Docket ID No. EPA-R06-OAR-

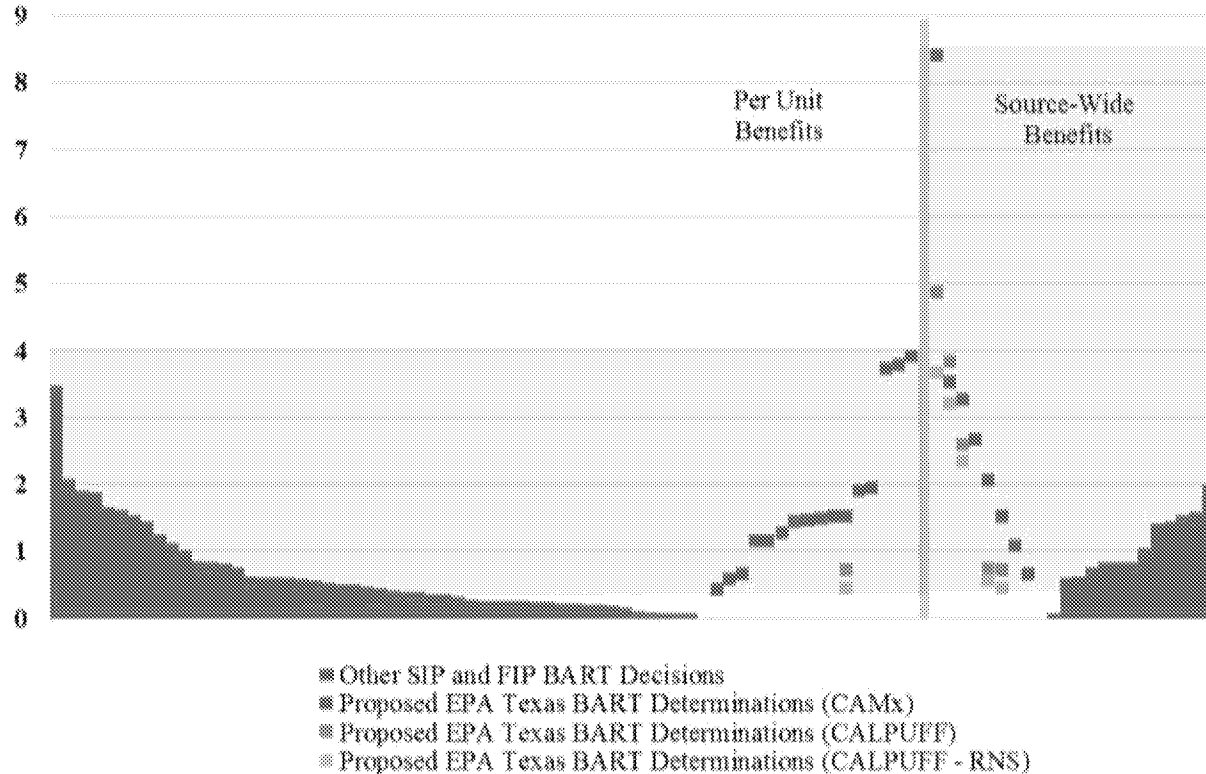
In its reasonable progress FIP for Texas, EPA was critical of Texas's \$2700/ton cost-effectiveness threshold, in part, because the state "rejected all controls with a cost effectiveness greater than \$2,700 without consideration to visibility benefit." Instead, the state estimated the visibility benefit of all the controls *together*, and declined to assess the potential benefit of controlling *individual* sources with significant, and potentially cost-effective, visibility benefits. As demonstrated by EPA's analysis and Dr. Andrew Gray's visibility modeling, however, EPA's individual BART determinations result in significant visibility benefits, individually and cumulatively.

Indeed, at each unit and source, the expected visibility improvement from the controls at a single Class I area is well within the range of improvement for final BART determinations issued or approved by EPA, as the chart below demonstrates.

---

2014-0754-0087, at 537 (Dec. 9, 2015) [hereinafter, "EPA Texas FIP RTC"]. Using that figure, EPA's proposed BART controls are well within the range of costs that even Texas found cost effective.

**Figure 2: Visibility Benefits of BART Determinations at a Single Class I Area (deciviews)\*<sup>72</sup>**



\*Proposed determinations include both scrubber retrofits and scrubber upgrades.

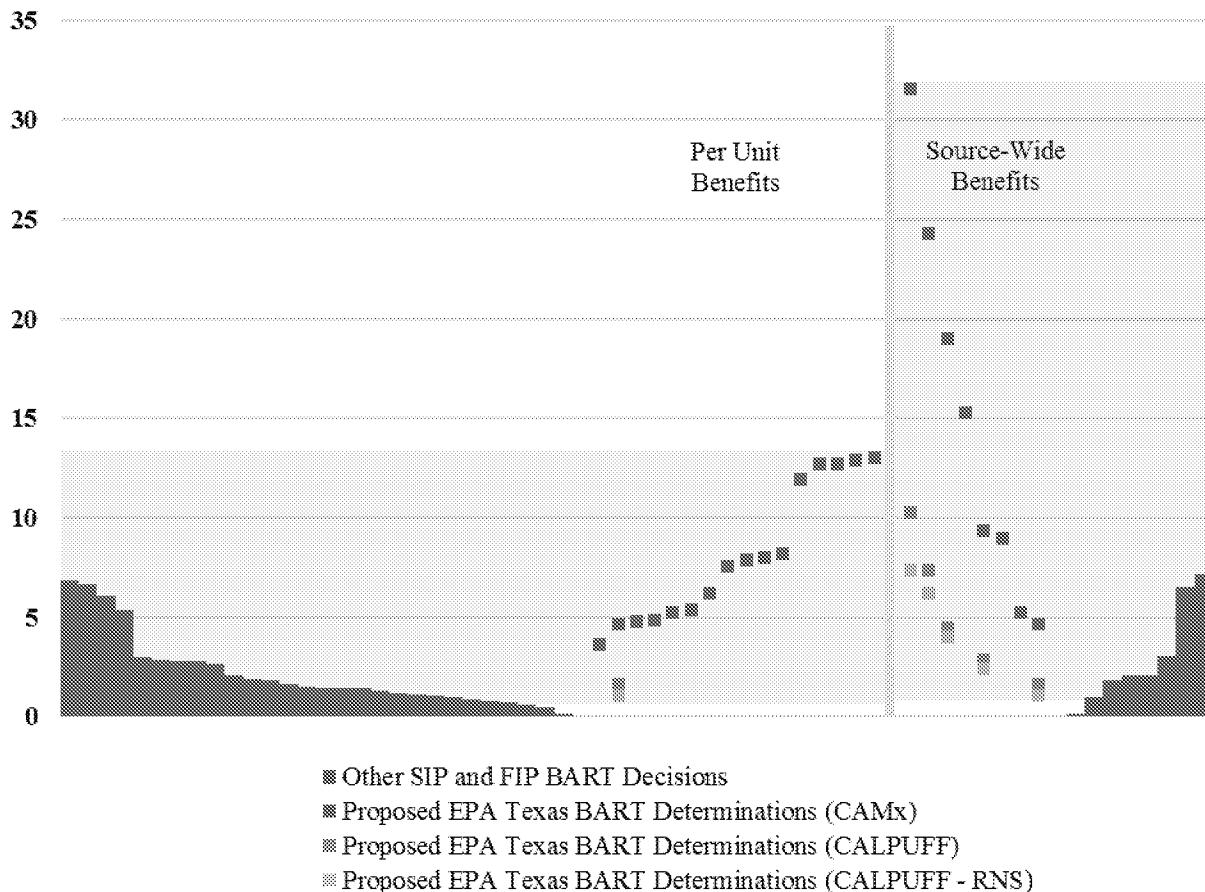
For all units except JT Deeley Unit 2 (which have already announced retirement), the expected improvement is larger than 0.5 dv at a single Class I area,<sup>73</sup> which virtually all states and EPA have used as the threshold for impacts when determining if a unit is subject to BART. See 40 C.F.R. Part 51, App. Y § (IV)(E)(4) (stating that a source contributes to visibility impairment if it has a baseline impact of 0.5 deciviews or more). Because 0.5 dv is the common starting point for visibility *impacts*, many BART determinations have required visibility *improvement* below this amount. Furthermore, industry has often asserted that a 1.0 dv improvement is the minimum improvement which is humanly perceptible. While we disagree with that claim, operating new scrubbers at each of the units, except for Deeley and Coletto Creek, would improve visibility by more than 1 dv for at least one Class I area.

<sup>72</sup> “Cost Effectiveness and Visibility in BART Determinations” spreadsheet and related documents (attached). “At a single Class I area” refers to either the benefit at the most impacted Class I area or the highest benefit at any single Class I area (these are often but not always the same Class I area). For EPA’s proposed Texas BART determinations, the highest benefit at any single Class I area is used. RNS refers to EPA’s modeling performed with a more recent baseline.

<sup>73</sup> The maximum visibility benefit expected from JT Deeley Unit 1 at any Class I area is 0.583 dv at Big Bend. See App’x E, EPA BART Modeling TSD, Revised December 2016 (baseline impact of 0.652 dv – high control impact of 0.069 dv = benefit of 0.583 dv).

Furthermore, the cumulative visibility improvement from operating a scrubber on each unit is significant, ranging from 3 to 13 dv. At each unit and source, the expected cumulative visibility improvement from the controls is well within the range of improvement for final BART determinations issued or approved by EPA, as the chart below demonstrates. As it has done in other plans, EPA must consider cumulative visibility benefits. *See Nat'l Parks Conservation Ass'n v. EPA*, 803 F.3d 151, 167 (3d Cir. 2015) (“What the EPA could determine, however, was that Pennsylvania underestimated the impact of pollution from its sources because it failed to calculate the cumulative visibility impact from each source.”).

**Figure 3: Cumulative Visibility Benefit of BART Determinations (deciviews)\*<sup>74</sup>**



\* Proposed determinations include both scrubber retrofits and scrubber upgrades. Although we disagree that it is appropriate, we have here limited cumulative visibility benefits demonstrated via CALPUFF to those Class I areas within 300 km, in keeping with EPA’s proposal.

<sup>74</sup> “Cost Effectiveness and Visibility in BART Determinations” spreadsheet and related documents (attached).

EPA's modeled results are amply documented. They span two different commonly-used visibility models and include modeling on a unit- and source- specific basis. As highlighted in Figures 2 and 3 above, all of EPA's modeling leads to a single conclusion – that the proposed controls will provide significant visibility benefits. Dr. H. Andrew Gray, Visibility and Health Modeling, Technical Support Document to Comments ff Conservation Organizations, at Section III.A (May 5, 2017) (attached). Moreover, this holds true even when the inputs are adjusted to consider different baselines or methodology. *Id.* at Section III.B.

Weighing the five BART factors together, three of the factors are neutral or do not weigh against selecting scrubbers as BART. The remaining useful life of each unit, except for Welsh Unit 2, should be at least 30 years, based on currently available information; thus, the remaining useful life of each source provides no basis for not requiring new pollution controls as BART. The environmental impacts of scrubbers would be minimal, and the remaining impacts are outweighed by the much larger environmental benefits of reducing tens of thousands of tons of harmful SO<sub>2</sub>. These units have no post-combustion controls for SO<sub>2</sub>, so there is nothing to consider for the existing controls factor.

As with most BART determinations, the decision hinges, then, on the cost and visibility improvement factors. Both the cost-effectiveness and the visibility improvement of the controls at each unit are justified as BART for these sources and otherwise fit within the range of cost-effectiveness and visibility improvement values which EPA has deemed reasonable in final BART determinations. Accordingly, consideration of the five statutory factors compels the conclusion that new scrubbers should be required as BART for each of the twelve units listed above.

## **2. *Scrubber Upgrades***

For Monticello 3, and Martin Lake 1-3, EPA proposes to find that upgrading their existing scrubbers is BART for SO<sub>2</sub>. 82 Fed. Reg. at 946. As explained below, consideration of the five BART factors supports EPA's proposal. The scrubber upgrades are a bargain: they deliver significant visibility improvement for a fraction of the cost of most BART controls.

Similar to the analysis above regarding the scrubber retrofits, the second through fourth BART factors, *see* 42 U.S.C. § 7491(g)(2), are largely neutral for the scrubber upgrades. The energy and nonair quality environmental impacts of upgrading existing scrubbers is even smaller than the minimal impacts of installing new scrubbers. Any incremental water use or electricity use attributable to upgrading the scrubbers should be relatively minor.

EPA's proposal to require upgrades to the existing scrubbers is based on a thorough consideration of the performance of the existing scrubbers, which complies with the requirement to consider existing controls in use at the source.

With respect to the remaining useful life of the sources, Monticello 3 and Martin Lake 1-3 have not announced any plans to cease operations or stop burning coal.



Consideration of the remaining two factors, cost and visibility, shows that for a relatively small amount of money, the scrubber upgrades will produce large improvements in visibility.

Unit	Control Technology	EPA's Cost-Effectiveness Estimate in Proposed Rule, Using 2011-2015 Data \$/ton <sup>75</sup>	EPA's Estimate of Expected Visibility Improvement at Most Impacted Area, dv <sup>76</sup>	EPA's Estimate of Cumulative Visibility Improvement, dv <sup>77</sup>
Monticello 3	Scrubber upgrade	1156 or less	3.719	11.940
Martin Lake 1	Scrubber upgrade	1156 or less	1.165	7.575
Martin Lake 2	Scrubber upgrade	1156 or less	0.655	6.199
Martin Lake 3	Scrubber upgrade	1156 or less	1.146	7.863

EPA's cost analysis has been shared with the owners of each of the affected sources, but not with the public, because the owners claimed that information essential to the cost analysis is confidential business information ("CBI"). *See* 82 Fed. Reg. at 928. Thus, we are unable to comment on EPA's methodology for calculating the cost of the scrubber upgrades.<sup>78</sup> However, EPA states that the cost-effectiveness of each of the scrubber upgrades is \$1,156 per ton or less, in 2013 dollars. *Id.* The visibility benefits to be gained from the rates achievable with these upgrades more than justify the cost of the upgrades at each unit. Compared to other BART determinations, this is extremely cost-effective, given that EPA has approved or issued many BART determinations which cost \$2000-4000 per ton or more (see Figure 1 above).

Although more appropriately compared to cost-effectiveness values for all BART determinations, the cost-effectiveness of these upgrades is within the range of values specifically for upgrades required in other haze plans. For example, EPA approved as reasonable the

<sup>75</sup> 82 Fed. Reg. at 928.

<sup>76</sup> *Id.* at 931 (Table 15).

<sup>77</sup> *Id.* at 940 (Table 22) – 944 (Table 31).

<sup>78</sup> EPA has not yet made an independent determination as to whether this information satisfies the stringent requirements for a CBI classification but instead is relying on the companies' assertions alone. *Id.* at 924. To provide the public with sufficient information to fully evaluate the proposal and the final rule, EPA should evaluate whether this information is in fact CBI. 40 C.F.R. § 2.204(a)(2), (3). It is unlikely that all, if any, of the information provided by Luminant is CBI, as the disclosure of the information is not trade secret, nor is it "likely to cause substantial harm to the business's competitive position." *Id.* § 2.208(e)(1). EPA has routinely made public similar information in other Regional Haze Rule determinations. *See* Stamper Report, Exs. 76-86 (compiling scrubber upgrade cost information from multiple regional haze plans).

Colorado haze plan, which required upgrades to the scrubbers at the Hayden power plant, with a cost-effectiveness of between \$2000 and more than \$3000 per ton. 77 Fed. Reg. 18,052, 18,069 (Mar. 26, 2012). Moreover, the State of Texas used \$2700 per ton as the threshold for cost-effective controls, *see* Texas SIP Submission at 10-7, and all four of the proposed upgrades have a cost-effectiveness value of less than half of \$2700.<sup>79</sup>

The scrubber upgrades would deliver large benefits and are inexpensive. All four of the upgrades would improve visibility more than the 0.5 dv, which states and EPA consider significant enough to make a source subject to BART, *see* 40 C.F.R. Part 51, App. Y § (III)(A)(I) (stating that any threshold for determining whether a source contributes to visibility impairment should be no higher than 0.5 dv, but may be lower, depending on a case-by-case evaluation of the source and the affected Class I areas). All of the upgrades would improve visibility by more than 1 dv at at least one Class I area.<sup>80</sup> The cumulative visibility improvement ranges from more than 6 dv, from controls at Martin Lake 2, to more than 11 dv, at Monticello 3. Many BART determinations have required visibility benefits well below those afforded by the scrubber upgrades (see Figures 2 and 3 above).

Weighing the five BART factors together, three of the factors are neutral. Luminant has not announced intentions to close any of the four units, much less make a legally binding commitment to do so. Thus, the remaining useful life is at least the life of the scrubbers, after the upgrades. The environmental impacts of scrubber upgrades would be even smaller than the minimal impacts from new scrubbers. And the selection of upgrades to existing scrubbers as BART necessarily complies with the requirement to consider existing controls. The cost-effectiveness values are extremely low, and the corresponding visibility benefits are high. In short, the scrubber upgrades are a bargain, delivering significant reductions in SO<sub>2</sub> pollution and improvement in visibility at a low cost. All five factors point in only one direction: requiring upgrades to the existing scrubbers at these four units as SO<sub>2</sub> BART.<sup>81</sup>

---

<sup>79</sup> Adjusting Texas's threshold to \$2016 yields an updated value of \$3,210/ton. *See* Stamper Report at 53. Note also that EPA found in its reasonable progress FIP that escalating Texas's \$2,700/ton cost-effectiveness threshold forward to 2014 when the performed the FIP cost analysis would yield a cost threshold of \$3,448/ton. EPA Texas FIP RTC at 537. Under either calculation, EPA's proposed BART scrubber upgrades are well-within the range of being cost-effective.

<sup>80</sup> The maximum visibility benefit to any Class I area from scrubber upgrades at Monticello Unit 2 is 1.164 dv at Upper Buffalo. This differs from the table above, which demonstrates the benefit at the maximum impacted Class I area, Caney Creek. 82 Fed. Reg. at 933.

<sup>81</sup> EPA's reliance on parts of the record from the Oklahoma and Texas Reasonable Progress Rule is proper. Luminant and other parties filed a motion asking the Fifth Circuit to prevent EPA from relying, in any subsequent rulemaking, on any information developed in the Oklahoma and Texas Reasonable Progress Rule. The Fifth Circuit properly denied the request. *See* Order, *Texas v. EPA*, No. 16-60118 (5th Cir. Mar. 22, 2017) (ECF Doc. 00513923006) ("IT IS FURTHER ORDERED that the joint motion of Petitioners and Petitioner-Intervenors for an order clarifying that the Stay Order encompasses all aspects of the Final Rule without exception and prohibits Respondent from relying on any of its SIP disapprovals or FIP actions and related

**B. The Scrubber Retrofits are Even More Cost Effective than EPA Calculated, and Facilities Could Achieve the Same or Lower Emission Limits with Fewer Impacts.**

EPA's analysis overestimates the costs of new scrubbers; thus, the proposed scrubber retrofits are even more cost effective than EPA calculated. Moreover, EPA did not consider types of scrubbers which can meet the same or lower emission limits as EPA proposes but with fewer ancillary impacts.

***1. EPA's Conservative Analysis Overestimates the Costs of New Scrubbers.***

As part of calculating the costs of new scrubbers, EPA determined baseline, uncontrolled emissions, and then calculated emissions after a new scrubber were installed and operated. EPA calculated baseline emissions by using maximum monthly emissions, whereas in many other BART determinations, EPA has used a three-year average of annual emissions. Stamper Report at 30-32. In addition, EPA used 2011-2015 emissions data to calculate baseline emissions, even though EPA has typically used 2000-2004 data to determine baseline emissions. *Id.* at 32-34.

The accompanying Stamper Report demonstrates that even if baseline emissions were calculated using a three-year average of annual emissions from the 2000-2004 timeframe, all of the scrubber retrofits are cost-effective. Changing the methodology from the use of maximum monthly emissions to annual average emissions has little effect on cost-effectiveness. Changing the baseline period from 2011-2015 to 2000-2004 has a larger effect: it makes the controls cheaper, and more cost-effective. The effect of these two changes is summarized in the table below, which comes from the attached Stamper Report.

**Cost-Effectiveness of the Scrubber Retrofits: EPA's Estimates vs. Revised Estimates**

Unit	Control Technology	EPA's Cost-Effectiveness Estimate in Proposed Rule, Using 2011-2015 Data \$/ton <sup>82</sup>	Stamper Revised Cost-Effectiveness Estimate Using 2011-2015 Data, \$/ton <sup>83</sup>	Stamper Revised Cost-Effectiveness Estimate Using 2000-2004 Data, \$/ton <sup>84</sup>
Big Brown 1	Wet FGD	1,189	1,089	863
Big Brown 2	Wet FGD	1,127	1,064	894
Coletto Creek 1	Wet FGD	2127	2173	2118
Harrington 061B	SDA	3909	3726	2503

---

findings in the Final Rule in any subsequent rule or action while the stay is in place is DENIED.”).

<sup>82</sup> 82 Fed. Reg. at 926-27.

<sup>83</sup> Stamper Report at 51.

<sup>84</sup> *Id.*

Harrington 062B	SDA	4180	4064	2574
JT Deeley 1	Wet FGD	3898	3486	2401
JT Deeley 2	Wet FGD	3712	3316	2249
Monticello 1	Wet FGD	2718	2238	1053
Monticello 2	Wet FGD	3031	2516	1030
WA Parish 5	Wet FGD	2417	2325	1822
WA Parish 6	Wet FGD	2259	2210	1869
Welsh 1	Wet FGD	3924	3936	2387

For 10 of the 12 units, new scrubbers are more cost-effective than EPA calculated when the three-year annual average emissions from 2011-2015 is used to calculate baseline emissions. For 2 of the 12 units, this change makes new scrubbers very slightly more expensive per ton of pollutant removed (from \$2127 to \$2173 per ton for Coletto Creek and from \$3924 to \$3936 for Welsh 1). For all 12 of the units, new scrubbers are more cost-effective than EPA calculated when the three-year annual average emissions from 2000-2004 is used to calculate baseline emissions. Indeed, for several units, using 2000-2004 data results in cost-effectiveness values one half or even one-third of what EPA calculated.

Thus, regardless of which years of emissions data are used, or whether monthly maximum or annual average emissions are used, the results are the same: all of the proposed scrubber retrofits are cost-effective.

## **2. *Scrubbers Can Achieve Lower Emission Rates Than EPA Assumed, And Can Do So With Fewer Impacts.***

In its analysis of scrubber retrofits, EPA assumed that wet scrubbers cannot achieve greater than 98% removal of SO<sub>2</sub> and cannot meet a limit lower than 0.04 lb/MMBtu. 82 Fed. Reg. at 925. However, systems such as the Chiyoda CT-121 FGD, which is used at several coal plants in the U.S., can remove 98-99% of SO<sub>2</sub> and achieve as low as 0.014 lb/MMBtu. Stamper Report at 21. Other coal units, which burn low-sulfur coal, operate other wet FGD systems and have achieved an annual SO<sub>2</sub> rate of 0.01 or 0.02. *Id.* at 23.

Similarly, EPA assumed that dry scrubbers cannot meet a rate lower than 0.06 lb/MMBtu. 82 Fed. Reg. at 925. But coal plants in the U.S. such as Newmont, Wygen II, and the Dry Fork Station have achieved lower emission rates with dry scrubbers. Stamper Report at 24.

Moreover, some of these scrubbers which can achieve lower emission rates than EPA assumed can do so at a lower cost and with reduced environmental impacts. For example, Alstom's NID system can achieve an emissions rate of 0.04 lb/MMBtu but with lower capital and maintenance costs and lower parasitic load requirements and lower water use than other dry FGD systems such as an SDA. *Id.* at 24-26.

In short, EPA's analysis of scrubber retrofits rests on conservative assumptions about scrubber performance. Based on the experience of coal plants around the country which are comparable to the 12 units here, scrubbers can achieve higher removal rates and lower emission

limits than EPA assumed. Thus, there is ample support for requiring the 12 units to meet emission limits lower than what EPA has proposed.

**C. EPA Must Evaluate Coal Switching or Blending in Combination with Cost-Effective Post-Combustion Controls.**

As explained in the Stamper Report, EPA should have evaluated cost-effective coal switching or coal blending in addition to the proposed cost-effective controls. Indeed, lower sulfur coal lowers significantly the operational costs and any energy and non-air quality environmental impacts of add-on controls. Moreover, many of the lignite-fired EGUs in Texas, including Big Brown, Martin Lake, and Monticello, which are virtually uncontrolled, are already blending with lower sulfur subbituminous coal. For those plants that already burn lower-sulfur coal, there may be even lower sulfur PRB coals available.

EPA must require that these units continue blending with lower sulfur coal as is currently being done at each unit. Further, EPA should evaluate whether these units could blend higher percentages of lower sulfur PRB coal in combination with add-on controls, which could lower the operational costs of the scrubber upgrades and retrofits required by EPA's BART proposal. By ensuring a lower sulfur content coal *in combination with add-on controls*, EPA's BART determination will ensure the lowest SO<sub>2</sub> rate with the BART control selected and at the lowest cost. As EPA notes with respect to its proposed BART determinations for Texas oil-fired units, the agency plainly has authority to consider and require fuel blending in combination with cost-effective post-combustion controls.

However, blending of lower sulfur coal may only be considered in conjunction with, rather than as a substitute for, add-on controls. Switching to lower sulfur coal such as Powder River Basin coal could, at best, lower SO<sub>2</sub> emission rates to 0.45-0.65 lb/MMBtu. Given that the presumptive SO<sub>2</sub> BART level of control, which is typically considered the floor for a case-by-case analysis, is 0.15 lb/MMBtu for coal-fired EGUs<sup>85</sup>, coal switching by itself would not satisfy BART.<sup>86</sup>

**D. DSI is not BART for Any of the Texas Units.**

For the 12 coal units which have no post-combustion SO<sub>2</sub> controls, EPA considered DSI at two different removal rates: 50% and between 80% to 90%, depending on whether the unit is equipped with Electrostatic Precipitators or baghouses for PM emissions. 82 Fed. Reg. at 925. The final rule must eliminate from consideration DSI at 80% and 90% because DSI is not capable of achieving those removal rates at these 12 units. Moreover, DSI is not feasible at all at certain units, and, where DSI is feasible, additional PM controls must be considered in light of the increase in PM emissions caused by DSI. *See* Stamper Report at 14-20.

---

<sup>85</sup> 40 C.F.R. Part 51, App. Y § (IV)(E)(4).

<sup>86</sup> 76 Fed. Reg. 64,186, 64,201 (Oct. 17, 2011) ("*The presumptive limits accordingly are the starting point in a BART determination . . .*") (emphasis added).

Luminant, the owner and operator of Monticello and Big Brown, has stated that “the use of DSI was determined infeasible from both an operational and economic point of view” at these two plants. EPA, FIP Cost TSD, Docket ID No. EPA-R06-OAR-2014-0754-0008 at 8. In the reasonable progress rulemaking, EPA agreed. “We have concluded that DSI is not a feasible alternative for the Luminant facilities.” *Id.* There is no new information in the record which calls into question EPA’s prior conclusion. As a result, the record evidence supports EPA’s finding that DSI is not technically feasible at Monticello and Big Brown, 82 Fed. Reg. at 923.

For the other units, DSI is a feasible control only at 50% removal efficiency. Sargent and Lundy, which produced the documentation for EPA’s Integrated Planning Model, indicated 80-90% removal cannot normally be achieved by DSI. Stamper Report at 14-18. Even if such high removal rates are achieved, they usually result in an increase in PM emissions, which would trigger PSD/NSR review and BACT. EPA did not account for the cost of installing and operating PM BACT controls in the DSI costs, so the attached Stamper Report has estimated the PM controls that would be necessary to prevent an increase in PM emissions from DSI. *See id.* at 19. The Stamper Report reviewed EPA’s Air Markets Database, which indicates that no units operate DSI to achieve 90% removal, only 2 units achieve 80% removal with DSI, and most achieve below 50% removal with DSI.

For all these reasons, the only realistic removal rate for DSI is 50%. However, it would be unlawful to select DSI as BART because, at a 50% removal rate, DSI does not meet the presumptive BART limits. For any “powerplant” with a generating capacity greater than 750 MW, BART must be determined according to the BART Guidelines. 42 U.S.C. § 7491(b). BART for the Big Brown, JT Deeley, Monticello, and WA Parish units must be determined in strict compliance with the BART Guidelines because each of these powerplants has a capacity greater than 750 MW. For the remaining plants, EPA should follow the BART Guidelines, as EPA has no provided no reason in the proposal to deviate from its own guidelines.

The BART Guidelines specify presumptive BART limits, which are the highest emission limits permissible for a source. Presumptive BART for SO<sub>2</sub> is at least 95% control or an emission rate of 0.15 lb/MMBtu, “unless EPA determines that an alternative control level is justified based on careful consideration of the statutory factors.” 40 C.F.R. Part 51, App. Y, § (III)(A)(1)

. DSI at a 50% removal rate obviously does not meet the 95% removal rate called for by presumptive BART. Thus, DSI is not BART.

#### **E. EPA Should Modify the Proposed Process by Which Owners Can Seek Alternative Emission Limits for the Scrubber Upgrades.**

As part of proposing scrubber upgrades as BART for certain units, EPA is offering a mechanism by which a company could seek an alternative emission limit. The main steps in the process would be for the company to complete the upgrade, retain a third party to develop a plan for optimizing the scrubber’s performance, install CEMS, and submit the CEMS data and other documentation to EPA along with a request for a different limit. 82 Fed. Reg. at 946-47.

While we do not oppose the availability of such a process, EPA should modify some aspects of the process, and clarify others. To begin, EPA must confirm in the final rule that this process would occur as a FIP revision, subject to all of the Clean Air Act requirements for a FIP revision, *e.g.*, 42 U.S.C. §§ 7607(d), 7410, including publication of a proposed rule in the *Federal Register*, opportunity for public comment, publication of a final rule in the *Federal Register*, and an opportunity for judicial review. In addition, in the final rule, EPA should reiterate that this process is not a one-way ratchet which can only raise emission limits; instead, the process may result in no change, a lower limit, or a higher limit. Furthermore, any such process must result in a new five-factor BART analysis. Given that a BART determination in the first instance requires consideration of all five statutory factors, 42 U.S.C. § 7491(g)(2), EPA cannot revise a BART determination without considering all five factors.

Further, consistent with its BART regulations, EPA must require sources to submit vendor documentation to support any claim that a unit cannot meet EPA's proposed emission limit.<sup>87</sup> While EPA's proposed BART FIP invites comment from sources that believe they cannot attain the scrubber upgrade emission limit,<sup>88</sup> EPA's practice and the BART regulations contemplate that sources must submit vendor documentation to support a claim that a particular control or emission limit is not technically feasible. Additionally, if EPA entertains any such proposed modification, the agency should require that the owner or operator of the EGU release from CBI the information previously submitted that EPA has relied upon in this rulemaking to support requiring a scrubber upgrade as BART to achieve 95% control.

**F. For the Units Which Occasionally Burn Oil, EPA Should, At a Minimum, Require the Stryker and Graham Units to Switch to Ultra-Low-Sulfur Diesel.**

EPA requests comment on all aspects of its proposed BART determinations for gas-fired units which occasionally burn oil, 82 Fed. Reg. at 945, which are Graham 2, Newman 2 and 3, OW Sommers 1 and 2, Stryker Creek ST2, and Wilkes 1, *id.* at 947. The permit for each of these units requires that any fuel oil burned contain no more than 0.7% sulfur by weight. EPA proposes that this existing limit constitutes SO<sub>2</sub> BART for all of these units.

EPA's analysis overlooks two key factors. First, EPA's focus on cost-effectiveness ignores the absolute costs, which are very small. EPA acknowledges that these units only "occasionally burn oil," and EIA data indicates that in 2015 none of these units burned more than 750 barrels of oil. Stamper Report at 100-01. Even if they were to burn 1000 barrels a year, the incremental cost to switch from their current fuel oil to ultra-low sulfur oil would be no more than \$19,000, which is very little money in the utility industry. *Id.*

Furthermore, EPA's analysis generally relied upon EIA and other public data for the price of fuel oil, rather than site-specific data on fuel prices. The only site-specific cost data EPA received is significantly lower than the price EPA used. Whereas EPA assumed that ultra-low-sulfur fuel would cost \$1.667 per gallon, 82 Fed. Reg. at 928, the Wilkes plant reported to

---

<sup>87</sup> 40 C.F.R. Part 51, App. Y § (IV)(D)(2).

<sup>88</sup> 82 Fed. Reg. 946 (Jan. 4, 2017).

EPA that its August 2016 contract for ultra-low-sulfur fuel had a price of \$1.423 per gallon, *id.* at 929.

Using the price reported by the Wilkes plant, the incremental cost to switch to ultra-low-sulfur fuel for 1000 gallons is less than \$9000, which is incredibly cheap in the utility industry. The very low cost weighs in favor of requiring all seven units to switch to ultra-low-sulfur diesel.

If the price reported by Wilkes is close to the true price, the cost-effectiveness of switching to ultra-low-sulfur diesel, \$3,970 per ton, 82 Fed. Reg. at 929, is within the range of cost-effectiveness values for final BART determinations EPA has approved or issued. Moreover, as EPA notes, the actual compliance cost could well be zero, because these gas plants may respond to a requirement to switch to ultra-low-sulfur diesel by simply burning gas all the time instead of occasionally burning oil.

Finally, requiring the Stryker and Graham units to switch to ultra-low-sulfur diesel would significantly improve visibility. Requiring this switching at Stryker would improve visibility by more than 0.5 dv at Caney Creek, and switching to ultra-low-sulfur diesel at Graham would improve visibility by 0.85 dv at Wichita Mountains. 82 Fed. Reg. at 934. Given the very low cost, and the significant visibility benefits, EPA should determine that SO<sub>2</sub> BART for Graham and Stryker requires the units to burn only ultra-low-sulfur diesel when they burn oil.

In sum, the final rule should provide that SO<sub>2</sub> BART for all of the gas-fired units which occasionally burn oil is the use of only ultra-low-sulfur diesel when burning oil. At a minimum, SO<sub>2</sub> BART for Stryker and Graham should require the use of only ultra-low-sulfur diesel when burning oil.

### **III. EPA MUST REDO ITS ANALYSIS OF PM BART BY CONDUCTING SOURCE-SPECIFIC ANALYSES.**

EPA should finalize its proposed disapproval of Texas's PM BART determinations, which assumed that SO<sub>2</sub> and NO<sub>x</sub> emissions contributing to PM formation would be regulated under CSAPR, *see* 82 Fed. Reg. at 935. Following the D.C. Circuit's remand of CSAPR, SO<sub>2</sub> emissions from TX sources are no longer limited by CSAPR. The assumption underlying Texas's PM BART determinations—that CSAPR would limit emissions of PM precursors from Texas sources—is now inaccurate; therefore, EPA must disapprove the State's PM BART determinations.

In conjunction with proposing to disapprove the State's PM BART determinations, EPA proposes a PM BART limit for the coal units equal to the Mercury and Air Toxics ("MATS") limit of 0.030 lb/MMBtu and work practice standards. 82 Fed. Reg. at 947. EPA's proposed PM BART determinations for coal units are unlawful, for four reasons.

First, EPA notes that Maximum Achievable Control Technology ("MACT") standards, such as the standards in the MATS Rule, are calculated based on the average of the emissions rates of the best-performing 12% of plants. 82 Fed. Reg. at 936. But the Clean Air Act prescribes different legal standards for BART and MACT. BART must be determined based on



a consideration of five factors for each source, 42 U.S.C. § 7491(g)(2), whereas MACT standards are based on the average rate achieved by the top 12% of plants in a category. 43 U.S.C. § 7412(d)(3). Had Congress wanted states and EPA to make BART determinations using the methodology for calculating MACT standards, Congress would have said so expressly. Instead, Congress included a separate definition for BART, and EPA lacks authority to rewrite the statute to conflate the MACT standard with the completely different BART standard. The fact that the BART Guidelines purport to authorize this unlawful approach is irrelevant; to the extent that the BART Guidelines purport to authorize EPA to do what the statute forbids, the BART Guidelines must yield to the statute.

Second, EPA failed to conduct a source-by-source evaluation for PM BART. EPA instead relied on a “streamlined” approach, which EPA asserts is authorized by the BART Guidelines, 82 Fed. Reg. at 935. But EPA’s regulations provide that for BART, “[t]he emission limitation must be established, *on a case-by-case basis* . . .” 40 C.F.R. § 51.301 (emphasis added). To the extent that there is a conflict between the Guidelines and the regulations, the regulations take precedence.

Third, as a result of EPA’s failure to conduct a source-specific analysis, EPA did not gather any data on the control efficiency of existing PM controls in use at each unit and the PM emissions from such units. *See, e.g.*, 82 Fed. Reg. at 936 (“We do not have any information on the control level efficiency of any of the ESPs for the units in question.”). The complete absence of PM emissions data from EPA’s BART analysis invalidates the proposed PM BART determinations, for it is impossible for EPA to evaluate the best emission limit for each unit without knowing anything about the current emissions rate at each unit.

Fourth, EPA failed to consider improvements to existing controls in use at each unit, as EPA did in its analysis of SO<sub>2</sub> BART for the same units. In its analysis of SO<sub>2</sub> BART, EPA noted that several units currently operate scrubbers, the most effective control technology for reducing SO<sub>2</sub> emissions. EPA then obtained data on the performance of the existing scrubbers, which ultimately led EPA to conclude that the scrubbers could be operated to remove far more SO<sub>2</sub> than they currently remove. 82 Fed. Reg. at 918, 924.

The agency’s analysis of PM BART arbitrarily deviates from the approach EPA took to SO<sub>2</sub> BART, because EPA assumed—with no supporting evidence—that PM controls installed at the BART-subject EGUs reflect the maximum removal efficiency that is typically capable with such controls. EPA stated that “[w]e consider a baghouse, widely reported to be capable of 99.9% control of PM, to be the maximum level control for PM and so the units equipped with a baghouse will not be further analyzed for PM BART.” 82 Fed. Reg. at 935. EPA’s decision not to gather any data on actual PM emissions from units with a baghouse, simply because a baghouse is the most effective PM control, is fundamentally inconsistent with EPA’s BART analysis for SO<sub>2</sub> emissions.

Furthermore, EPA’s decision not to analyze PM BART for units with a baghouse cannot be reconciled with the huge quantities of PM emitted by the units, and the even larger quantities of PM the units are authorized to emit by their permits. For example, EPA notes that Big Brown

1 and 2 and Monticello 1 and 2 have baghouses. 82 Fed. Reg. at 935. As EPA is well aware, a unit can have a baghouse but not operate the baghouse, especially during startup and shutdown periods. This is particularly true for the units that do not have full-size baghouses capable of treating 100% of the flue gas, such as at Big Brown Units 1 and 2, Monticello Units 1 and 2, and likely also at Welsh Unit 1. *See* Stamper Report, Section II.A. The applicable air permits purport to authorize each Big Brown unit to emit 4,788 lbs/hr of PM during startup and shutdown and each Monticello unit to emit 2,415.7 lbs/hr during startup and shutdown.<sup>89</sup> Moreover, the permits purport to authorize startup periods as long as 24 hours.<sup>90</sup> In sum, while Big Brown and Monticello may have baghouses, the most effective PM control technology, both plants do not operate their baghouses for a significant period of the time.

Based on recent BART and BACT determinations, units operating a baghouse or an ESP can meet a PM emission limit much lower than the 0.03 lb/MMBtu limit which EPA proposes for PM BART. EPA issued a PM BART determination for the Four Corners power plant of 0.012 lb/MMBtu for Units 1-3 and 0.015 lb/MMBtu for Units 4 and 5. *See* 75 Fed. Reg. 64,221 (Oct. 19, 2010). EPA approved South Dakota's determination that PM BART for Big Stone power plant is a limit of 0.012 lb/MMBtu, applicable at all times including startup, shutdown, and malfunction. 76 Fed. Reg. 76,646, 76,659 (Dec. 8, 2011); 77 Fed. Reg. 24845. EPA recently approved PM BART limits of 0.015 lb/MMBtu for several units in Utah that had installed baghouses in recent years, claiming that a 0.015 lb/MMBtu limit "represents what can be *continuously* achieved with a properly operated baghouse on these units." 81 Fed. Reg. 43,894, 43,920 (July 5, 2016) (emphasis added). In addition, recent PSD permits for Plant Washington, Longleaf, and Desert Rock have contained PM limits of 0.010 lb/MMBtu based on the operation of a fabric filter baghouse. *See* Stamper Report, Exs. 85-87.

For all these reasons, EPA should not finalize its proposed PM BART determinations because the proposed limits do not reflect a proper unit-specific BART analysis. Instead, EPA should conduct a new, five-factor BART analysis for each source of PM emissions. EPA must base these analyses on actual PM emissions from an appropriate baseline period, rather than on "streamlined" assumptions about what control technologies are capable of achieving, and fully evaluate whether additional or upgraded PM controls are warranted.

#### **IV. RELIABILITY**

##### **A. EPA May Not Weaken the Proposed Emission Limits Based on Vague,**

---

<sup>89</sup> Letter from M. Wilson, Office of Air, Texas Commission on Environmental Quality to K. Mireles, Luminant Generation Co., LLC, Permit No. 56445 (Dec. 16, 2011) ("Big Brown Permit") (attached) at LUM-BB-2909 (setting Maximum Allowable Emission Rates for PM at 4,788 lbs/hr each for Unit 1 and for Unit 2 during startup/shutdown); Letter from M. Wilson, Office of Air, Texas Commission on Environmental Quality to K. Mireles, Luminant Generation Co., LLC, Permit No. 2401 ("Monticello Permit") (attached) at pdf pages 13-14 (setting Maximum Allowable Emission Rates for PM at 2,415.7 lbs/hr each for Units 1, and 2 during startup/shutdown).

<sup>90</sup> Big Brown Permit at LUM-BB-2900; Monticello Permit at 2.

### Unsupported Claims About Reliability Impacts.

Although we believe EPA has options for addressing practical concerns about grid reliability as described in Section IV.B below, we do not believe that grid reliability must be considered in a BART determination as a legal matter. Vague and undocumented concerns about reliability cannot justify weakening or delaying the implementation of emission limits. EPA should require specific, documented, and enforceable plans to retire a unit by a date certain if the agency is to consider broader grid impacts in its five-factor analysis.”

In a procedural order considering a motion to stay the Oklahoma and Texas Reasonable Progress Rule, a Fifth Circuit panel took “the energy and nonair quality environmental impacts of compliance” factor of the BART determination, 42 U.S.C. § 7491(g)(2), to encompass grid reliability impacts. *Texas v. EPA*, 829 F.3d at 431. This was an entirely novel application of the statutory language, which we disagree with, for the reasons explained in our briefs filed in opposition to the stay motion.

Even if EPA were to consider potential retirements and grid reliability under this factor, however, the statute requires BART be determined on a source by source basis, requiring consideration of “any existing pollution control technology in use *at the source*” and “the remaining useful life *of the source*.” 42 U.S.C. § 7491(g)(2). Had Congress intended BART to be determined for a category of sources, or for an industry as a whole, Congress would have used the phrase “in use for that category of sources” or “in use in the industry.” EPA’s regulations reflect this interpretation of the statute, 40 C.F.R. § 51.301, as does EPA’s practice, which has been to analyze all BART factors for each visibility impairing pollutant on a source-by-source basis.

Thus, EPA would need information about a specific unit’s plan to retire to comply with the rule in lieu of installing or upgrading scrubbers, as well as confirmation and evidence that the retirement is *due to the rule*, to analyze the reliability “impacts of compliance” at the unit. While we do not believe this analysis is legally required under any of the five BART factors, if EPA disagrees, then it must still address the “source-specific” nature of the inquiry into each factor. Unless a source provides detailed information substantiating claims that a particular unit or units would retire rather than install controls required as BART, that the decision to retire would not be made were it not for the BART compliance deadline, and that such a decision would directly impact grid reliability, EPA will be unable to account for grid reliability concerns in a source-specific BART determination. Moreover, the mere fact of retirements does not raise a reliability issue, as explained in Section IV.B below. Instead, ERCOT has formalized procedures that EPA may rely upon to be alerted of reliability problems resulting from retirements.

EPA has considerable expertise and knowledge in assessing whether compliance costs will cause a unit to shut down as well as the impact of compliance costs on electricity prices. In the course of national rulemakings, EPA routinely considers the likelihood that power plants will respond to EPA regulations by retiring or repowering with a different fuel. EPA often uses the Integrated Planning Model (“IPM”) to forecast the effect of compliance costs on the viability of power plants and the price of electricity. For example, in the Clean Power Plan, the Coal Combustion Residuals Rule, and the Effluent Limitations Guidelines, EPA conducted extensive

IPM modeling of the impact of compliance costs on unit shutdowns and the price of electricity. EPA employs numerous economists and other specialists whose job is to prepare a Regulatory Impact Analysis studying the economic effects of regulations.<sup>91</sup> Careful and documented analyses that take into account the source-specific economics of each unit are the minimum required for analyzing the likelihood of retirements resulting from the rule.

**B. PA Should Include An Accurate And Complete Factual Record On Reliability In The Final Rule.**

Although we agree with EPA's position that the statute does not require a reliability analysis as part of the BART determination, especially where there have been only vague and speculative claims about plant retirements, we recognize that as a practical matter, stakeholders may be concerned about the impact of this rule on the Texas grid. We are also mindful that the court reviewing a motion to stay the Oklahoma and Texas Reasonable Progress Rule found a likelihood of error where the court perceived EPA had "summarily dismissed concerns about grid reliability in Texas." *Texas v. EPA*, 829 F.3d 405, 431–32 (5th Cir. 2016).<sup>92</sup> To give the public and courts comfort on this issue, we urge EPA to incorporate into the record the following evidence that: (a) coal retirements can be expected with or without the finalization of BART limits and (b) coal retirements are fully compatible with a robust and reliable electric grid in Texas.

**C. Texas's Electric Grid is in Already in Transition from Coal to Clean Energy, Independent of any Emissions Limits Imposed by BART.**

*1. Overview of Coal's Decline in Texas.*

To understand the potential impacts *of this rule* on grid reliability in Texas, it is necessary to understand the overarching trends of energy resources in Texas and the true causes of those trends. The economic pressures on coal-fired power plants in Texas are enormous with or without the BART rule, and many experts, including the grid operator (ERCOT), are expecting and planning for coal retirements. In contrast, there is no independent study to date that considers the causal link between SO<sub>2</sub> limits and coal retirements in any depth and finds that finalization of the BART rule will trigger a retirement decision by any unit in Texas. In fact, expert studies show the opposite. As such, it would be arbitrary to attribute expected coal

---

<sup>91</sup> See EPA, Regulatory Impact Analysis (RIA) for EPA's 2015 Coal Combustion Residuals (CCR) Final Rule (2014), Docket ID No. EPA-HQ-RCRA-2009-0640-12034; EPA, Regulatory Impact Analysis for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category (2015), Docket ID No. EPA-HQ-OW-2009-0819-5849; EPA, Regulatory Impact Analysis for the Clean Power Plan Final Rule (2015), Docket ID No. EPA-HQ-OAR-2013-0602-37105.

<sup>92</sup> While acknowledging this finding, we strongly disagree with it, given the careful consideration of reliability issues conducted by EPA (with the help of a consultant) and placed in the administrative record.

retirements to the proposed BART emission limits and use that rationale to weaken or withdraw the rule.

The Texas grid is rapidly evolving from a coal-centric system to one that is more flexible and clean. Under ERCOT's competitive market structure, lowest-price generation and resources are dispatched on the grid first. Currently, those are energy efficiency, demand response, wind, natural gas, and increasingly solar. As a result, coal's share of the total energy generated in ERCOT has already declined from 37.2 percent in 2013 to 28.1 percent in 2015, and this is rapidly being replaced with clean energy, as well as gas.<sup>93</sup> Texas already produces more wind power than any other state. Installed wind capacity in ERCOT increased from 1,854 megawatts (MW) to 16,631 MW between 2005 and 2016.<sup>94</sup> Additional new wind projects totaling more than 11,500 megawatts have agreements signed to be online by 2019. Texas ranks ninth nationally in cumulative installed solar capacity with 1,215 MW.<sup>95</sup> In its 2016 Long-Term System Assessment, ERCOT found that approximately 20,000 MW of new solar capacity would be added by 2031 under a "current trends" scenario.<sup>96</sup>

At a March 2017 conference on the Texas grid, several experts predicted coal would continue its decline due to the inability of Texas's aging coal plants to compete economically with other resources, not due to environmental regulations. The experts noted their expectation of "further economic pressure on ERCOT's coal units, which have been struggling to compete in the market," and explained that beyond the economic pressures, the aging coal plants at issue in this rule are simply reaching the end of their useful life.<sup>97</sup> The director of the ERCOT Independent Market Monitor, Beth Garza, pointed out much of Texas' coal fleet was built between 1975 and 1980. "We're now in 2017. That would seem to be an economically rational life span for many of these assets," Garza said. "They're going to run until something big breaks, and it just won't get fixed."<sup>98</sup>

In preparing ERCOT's 2015 State of the Market Report, the most recent available, Potomac Economics similarly found that many coal-fired generators were likely not profitable.<sup>99</sup>

---

<sup>93</sup> *The ERCOT Region: Where Are We Headed?* Warren Lasher Director, System Planning (Oct. 22, 2016) (attached).

<sup>94</sup> *Id.*

<sup>95</sup> Solar Energy Industries Association, *Top 10 Solar States*, <http://www.seia.org/research-resources/top-10-solar-states> (attached).

<sup>96</sup> ERCOT 2016 Long-Term System Assessment, [http://www.ercot.com/content/wcm/lists/89476/2016\\_Long\\_Term\\_System\\_Assessment\\_for\\_the\\_ERCOT\\_Region.pdf](http://www.ercot.com/content/wcm/lists/89476/2016_Long_Term_System_Assessment_for_the_ERCOT_Region.pdf) (attached).

<sup>97</sup> RTO Insider, Overheard at the Infocast ERCOT Market Summit 2017 (Mar. 13, 2017), <https://www.rtoinsider.com/infocast-ercot-market-summit-2017/> (attached).

<sup>98</sup> *Id.*

<sup>99</sup> Potomac Economics, *2015 State of the Market Report for the ERCOT Wholesale Electricity Markets* (June 2016), [http://www.puc.texas.gov/industry/electric/reports/ERCOT\\_annual\\_reports/2015annualreport.pdf](http://www.puc.texas.gov/industry/electric/reports/ERCOT_annual_reports/2015annualreport.pdf) (attached).

As explained by yet another expert on energy economics, factors placing many coal units, under substantial economic and financial stress include:

- The collapse of natural gas prices and a subsequent decline in the cost of generating power at natural gas-fired power plants;
- Increased competition from renewable wind and solar resources, as the total MW of installed wind and solar capacity have soared in recent years due to steep declines in the installation prices for wind and solar photovoltaic (“PV”) resources;
- Precipitous declines in energy market prices in the deregulated wholesale markets where many existing coal plants are located; and
- Rising coal plant operating and maintenance costs, decreased value in coal assets, and unfortunate business decisions made by the utility companies themselves.<sup>100</sup>

All of these circumstances, well document by numerous experts, ERCOT’s independent market monitor, the grid operator itself, have combined to undermine the viability of continued operation of the existing coal-fired plants affected by the rule and – crucially – are independent of EPA’s Texas BART Proposal.

**2. *Experts and Generators Themselves Predict the Units Affected by Texas BART Proposal Will Retire Due to Continued Low Electric Prices in the ERCOT Market, Not BART Limits.***

Experts at ERCOT and throughout the energy economics field agree that the Texas energy grid is already shifting away from coal and that trend will continue with or without EPA’s proposed BART limits. These experts have noted that the Luminant plants and others impacted by this proposed rule are ripe for retirement due to market conditions. In April 2016, Moody’s Investor Services found that Monticello, Big Brown, Parish, Coletto Creek, Fayette, and JT Deely, are all expected to have negative free cash flows *independent of the rule*.<sup>101</sup> Moody’s found that Martin Lake, while expected to have small positive cash flows, is also “at risk.”<sup>102</sup>

In September 2016, the Institute for Energy Economics and Financial Analysis (“IEEFA”) released a report entitled, *The Beginning of the End: Fundamental Changes in Energy Markets are Undermining the Financial Viability of Coal-Fired Power Plants in Texas*.

---

<sup>100</sup> Decls. in Support of Sierra Club and NPCA’s Response in Opposition to Motions to Stay, Decl. of David Schlissel, *Texas v. EPA*, No. 16-60118, at DEC 52-79 (5th Cir. Apr. 7, 2016) (detailing each factor) (ECF Doc. 00513457087) (attached); *see also* Institute for Energy Economics and Financial Analysis, *The Beginning of the End: Fundamental Changes in Energy Markets are Undermining the Financial Viability of Coal-Fired Power Plants in Texas*, [http://ieefa.org/wp-content/uploads/2016/09/The-Beginning-of-the-End\\_September-2016.pdf](http://ieefa.org/wp-content/uploads/2016/09/The-Beginning-of-the-End_September-2016.pdf) [hereinafter, “IEEFA Report”] (attached).

<sup>101</sup> Andrew Engblom, SNL FINANCIAL, *Moody’s says coal retirements the ‘x-factor’ as renewables pressure ERCOT prices* (Mar. 28, 2016) (attached, with permission from SNL).

<sup>102</sup> *Id.*

<sup>103</sup> The report uses economic modeling to predict profitability of seven Texas coal-fired power plants, finding that:

- “Continued operation of Luminant’s Monticello plant will be extremely unprofitable, whether or not the plant is required to install new scrubbers or to retrofit the existing scrubber on Unit 3;”
- “Like Monticello, continued operation of Luminant’s Big Brown plant will be extremely unprofitable, whether or not the plant is required to install new scrubbers;”
- “Luminant’s Martin Lake plant would produce very minimal positive pre-tax earnings during the years 2017-2024 under our base-case assumptions for generation and energy market prices even if it does not have to retrofit its existing scrubbers;”
- “Continued operation of Dynegy’s Coletto Creek plant will be unprofitable whether or not the owner has to install a new scrubber.”<sup>104</sup>

In a follow-up article, IEEFA noted that these plants are already “shadows of their former selves” in that they have decreased their operations drastically in the last 5-10 years.<sup>105</sup>

The Brattle Group came to a similar conclusion, finding that “Due to Texas’s abundant low cost natural gas and increasing renewable penetration, coal-fired power plants are under economic strain that may be too great to overcome, even without new federal environmental regulations.”<sup>106</sup>

The owners of the plants themselves have presented the same dire analyses to their investors and the public. The owner most impacted by this rule is Luminant, with 8 units needing upgrades or retrofits to meet the required emission limits. Luminant has been careful to explain that the poor economic condition of its plants results from low wholesale power prices, *not* environmental regulations. For instance, in February 2016, when it announced the closure of three coal mines serving the Monticello plant, Luminant’s spokesperson stated, “The decision to close the mines was made based on the current business climate and not as a response to current or pending environmental regulations.”<sup>107</sup> This was Luminant’s view despite the fact that Monticello would have needed to install two scrubbers and retrofit a third to meet the limits in the Oklahoma and Texas Reasonable Progress Rule issued in December 2015, just as it would need to do under the Texas BART Proposal.

---

<sup>103</sup> IEEFA Report.

<sup>104</sup> *Id.* at 31-33

<sup>105</sup> David Schlissel, *IEEFA Data Byte: For Key Coal-Fired Plants in Texas, the Baseload Party Is Over* (Oct. 5, 2016), <http://ieefa.org/ieefa-data-byte-key-coal-fired-plants-texas-baseload-party/> (attached).

<sup>106</sup> The Brattle Group, *Reliability Risks Due to Coal Retirement at ERCOT* (Dec. 7, 2016) (attached). EPA’s consultants agree. *See* Exs. in Support of EPA’s Opp. to Mots. for Stay, Decls. of Jeremy Fisher (Ex. C) and Robert Fagan (Ex. D), *Texas v. EPA*, No. 16-60118 (Apr. 7, 2016) (ECF Doc. 00513457037) (attached).

<sup>107</sup> *Luminant Closing Mines, Laying off 80*, LONGVIEW NEWS JOURNAL, Feb. 29, 2017 (attached).

As reported in March 2017 by investor research firm UBS, Luminant's parent company Vistra also has warned its investors of the potential that Big Brown, Martin Lake, and Monticello could retire, citing market forces, not environmental regulations. "VSTE management recently highlighted its own ongoing operational performance review, to be completed in mid-2017 and specifically called out Luminant's legacy coal plants Big Brown, Martin Lake, and Monticello as being potentially 'not able to survive' in the current market environment."<sup>108</sup> Similarly, UBS explained to its clients "We look for further pressure on fossil economics driven by capex reinvestment rather than environmental updates, specifically noting VSTE [Luminant parent company, Vistra,] three seasonal coal plants (5.2GWs) [Big Brown, Martin Lake, and Monticello] generate negative FCF [Free Cash Flow] according to [management]."<sup>109</sup> In a recent presentation to its investors, Luminant did not even name its aging coal units in discussing its assets, instead lumping them into the category of "seasonal coal."<sup>110</sup>

Indeed, Luminant began seasonally mothballing a number of its coal units due to economic concerns long before SO<sub>2</sub> limits were proposed by EPA pursuant to the Regional Haze program.<sup>111</sup> For example, in 2012, Luminant determined that two of the three units at its Monticello coal-fired EGU and one of the two units at its Martin Lake EGU could no longer compete in the marketplace as year-round generators and requested that they be seasonally idled starting in October of each year.<sup>112</sup> This action was taken due to low wholesale electricity prices, according to the company.<sup>113</sup> As a Luminant spokesperson explained with respect to Monticello,

---

<sup>108</sup> UBS Global Research, US Electric Utilities & IPPs Keeping Tabs on Texas Power & Beyond (Apr. 3, 2017).

<sup>109</sup> UBS Global Research, US Electric Utilities & IPPs Explaining the Next Retirements Cycle (Mar. 16, 2017).

<sup>110</sup> Vistra Energy, Lender Presentation (Dec. 6, 2016) (attached).

<sup>111</sup> Notices of Suspensions of Operations, [http://lists.ercot.com/scripts/wa-ERCOT.exe?A2=NOTICE\\_CONTRACTS;570e3f91.1507](http://lists.ercot.com/scripts/wa-ERCOT.exe?A2=NOTICE_CONTRACTS;570e3f91.1507) (attached); [http://lists.ercot.com/scripts/wa-ERCOT.exe?A3=ind1312&L=NOTICE\\_CONTRACTS&E=quoted-printable&P=5282&B=--\\_000\\_3E87B359A497CF43BB3CB18506AECF8CD072BBCPW0013ercotcom\\_&T=text%2Fhtml;%20charset=us-ascii&XSS=3&header=1](http://lists.ercot.com/scripts/wa-ERCOT.exe?A3=ind1312&L=NOTICE_CONTRACTS&E=quoted-printable&P=5282&B=--_000_3E87B359A497CF43BB3CB18506AECF8CD072BBCPW0013ercotcom_&T=text%2Fhtml;%20charset=us-ascii&XSS=3&header=1) (attached); [http://lists.ercot.com/scripts/wa-ercot.exe?A2=NOTICE\\_OPERATIONS;f91d721d.1210](http://lists.ercot.com/scripts/wa-ercot.exe?A2=NOTICE_OPERATIONS;f91d721d.1210) (attached).

<sup>112</sup> Energy Futures Holding Corporation SEC Form 10-K for the Fiscal Year Ended December 31, 2014, at 42, <https://www.sec.gov/Archives/edgar/data/1023291/000102329116000017/efh-12312015x10k.htm> (attached); Energy Futures Holding Corporation SEC Form 10-K for the Fiscal Year Ended December 31, 2015, <https://www.sec.gov/Archives/edgar/data/1023291/000102329115000003/efh-12312014x10k.htm> (attached).

<sup>113</sup> *Id.*



“[w]ith power prices very low, those two units are not economical to run during these low demand seasons.”<sup>114</sup>

Also demonstrating the struggles faced by these plants prior to any SO<sub>2</sub> limits being implemented, in 2015, Energy Futures Holdings took an impairment of \$2.541 billion for its Big Brown, Martin Lake, Monticello, Sandow 4 and Sandow 5 lignite coal plants and related mining facilities. According to the company, this write off was the “result of impairment factors related to the continued decline in forecasted wholesale electricity prices in ERCOT.”<sup>115</sup> Thus, this decline in value was completely independent of Regional Haze obligations. It followed Energy Futures Holdings’ 2014 write off of \$4.640 billion of the value of the Martin Lake, Monticello and Sandow 5 and related mining facilities.<sup>116</sup> NRG Energy also has recently recorded substantial impairments in the value of its W.A. Parish coal plant.<sup>117</sup> Coletto Creek’s new owner, Dynegy, is widely expected to retire the plant due to its low value, though no plans have yet been announced.<sup>118</sup>

In summary, it would be arbitrary and capricious to peg upcoming coal plant retirements to the finalization of the Texas BART Proposal when numerous experts have concluded that the plants are at risk of retirement with or without the rule due to wholesale electricity prices and the companies’ own business decisions. There is no evidence whatsoever that Texas BART Proposal would be the “nail in the coffin” or otherwise spell demise for any of these plants.<sup>119</sup>

---

<sup>114</sup> Terrence Henry, State Impact Texas, *Why the Texas Grid May Need a Coal Plant to Keep Running This Winter* (Oct. 21, 2012), <https://stateimpact.npr.org/texas/2012/10/01/why-the-texas-grid-may-need-a-coal-plant-to-keep-running-this-winter/> (attached).

<sup>115</sup> Energy Future Holdings Corporation SEC Form 10-K filing for the Fiscal Year Ended December 31, 2015, at 103.

<sup>116</sup> *Id.*

<sup>117</sup> NRG Energy, Inc., Form 10-K for the Fiscal Year Ending December 31, 2015, at 107, <https://www.sec.gov/Archives/edgar/data/1013871/000101387116000022/a201510-k.htm> (attached).

<sup>118</sup> Jordan Blum, HOUSTON CHRONICLE, Texas move makes Dynegy a major national player (Apr. 22, 2016), <http://www.houstonchronicle.com/business/energy/article/Texas-move-makes-Dynegy-a-major-national-player-7305048.php> (attached); *Dynegy reports losses as it shuts down coal-fired power plants*, FUEL FIX (Feb. 23, 2017) (attached); Andrew Engblom, SNL FINANCIAL, *Moody's says coal retirements the 'x-factor' as renewables pressure ERCOT prices* (Mar. 28, 2016) (attached, with permission from SNL).

<sup>119</sup> While some of the generators impacted by this rule threatened retirement of their units when faced with the same emission limits in the Oklahoma and Texas Reasonable Progress Rule, these threats were, self-serving, vague, and uncertain. The generators provided no evidence that they would continue operating these units were it not for the need to meet emission limits. Such threats in the past have proven untrue. When the CSAPR was finalized, Luminant threatened to close several of its lignite mines if the rule was not put on hold. Although Luminant and its allies successfully delayed implementation of the rule for several years, the company proceeded to close the mines anyway.

### 3. *The Special Case of Plants Regulated by the PUC, Which Can Profit off of Scrubber Installations.*

Because their rates are regulated by the Public Utility Commission of Texas, and not subject to competition with the ERCOT market, the Harrington and Welsh plants are not subject to the same economic pressures as deregulated plants like the Luminant fleet, Coletto Creek, and Parish. However, EPA again would be wrong to attribute potential retirements of these plants to the Texas BART Proposal. Regulated plants like Harrington and Welsh are able to recover the cost of installing scrubbers from ratepayers if they can show that doing so is reasonable and prudent – *i.e.*, that it would be the least cost option versus obtaining energy supply from other sources. In fact, plant owners may see profit from adding scrubbers through a Public Utility Commission-authorized Return on Equity for capital investments in the plant.<sup>120</sup> Accordingly, there is no basis for assuming that the need to make pollution control investments would drive retirement decisions for Welsh or Harrington.

As Harrington's parent company, Xcel told the Securities and Exchange Commission last year, "In January 2016, the EPA adopted a final rule establishing a FIP for the state of Texas . . . . As part of this final rule, the EPA imposed SO<sub>2</sub> emission limitations that reflect the installation of dry scrubbers on Tolk Units 1 and 2, with compliance required by February 2021. Investment costs associated with dry scrubbers could be approximately \$600 million. SPS plans to appeal the EPA's decision. SPS believes these costs would be recoverable through regulatory mechanisms if required, and therefore does not expect a material impact on results of operations, financial position or cash flows."<sup>121</sup> Harrington's situation is identical to Tolk in terms of cost recovery from the PUC: like the Tolk plant, costs for upgrading Harrington can also be recovered "through regulatory mechanisms."

Again, **there is no evidence that *this rule* is going to cause the subject plants to retire.** To the contrary, many of the plants will face retirement decisions with or without the rule. As explained below, the Texas grid operator is positioned to accommodate coal retirements both in terms of total energy resources on the grid, and localized concerns about transmission line stability.

#### **D. Even if Certain Plants Retire, Texas Will Meet its Energy Needs.**

ERCOT has expressed confidence that the amount of power available to the grid (total "capacity") will be comfortably above electricity demand well into the future. In its most recent Capacity, Demand and Reserves report, ERCOT predicted that the "reserve margin" (the difference between the grid's total resources and the total demand for electricity) would remain

---

<sup>120</sup> James Tong & Jon Wellinoff, *A Basic Primer on Capital Investment Financing for Regulated Investor Owned Utilities* (Mar. 25, 2015), <http://www.utilitydive.com/news/a-basic-primer-on-capital-investment-financing-for-regulated-investor-owned/379165/> (attached).

<sup>121</sup> Xcel Energy Inc., Form 10-K for the Fiscal Year Ended Dec. 31, 2015, <https://www.sec.gov/Archives/edgar/data/72903/000007290316000123/xcel1231201510-k.htm> (attached).

between 16.9% and 20.2% between now and 2021.<sup>122</sup> ERCOT's target reserve margin is 13.75%. Total summer capacity – the time of year when it is the hardest to meet electricity demand as air conditioners are running full blast each afternoon – is also comfortably above the expected demand.<sup>123</sup>

As noted above, ERCOT is anticipating substantial new gas, wind, and solar capacity to come on line. As a result of these many additions and abundant resource potential, ERCOT will have ample capacity to accommodate coal-plant retirements, if any. The total resource needs of the grid will also be moderated as ERCOT improves its demand-response and ancillary service programs to diminish peak energy requirements.<sup>124</sup>

As explained in the IEEFA report referenced above, ERCOT's 2016 LTSA Update suggests that even with a *minimum* projected 6,278 MW of coal retirements (representing Big Brown, Monticello, Martin Lake, and Coletto Creek), system reserve margins (*i.e.*, the cushion between available capacity and expected demand for electricity) will generally remain above the targeted 13.75 percent level through at least through 2026, if not 2031.<sup>125</sup> While ERCOT found “small” shortfalls in some scenarios, these results are conservative because the LTSA modeling does not reflect the addition of any new gas-fired capacity after 2016 and only includes new wind capacity in three of the eight scenarios examined. These assumptions are not reasonable. **Developers have proposed more than 30 new gas plants in Texas, making up about a quarter of new gas capacity planned in for the whole US.**<sup>126</sup> In addition, wind capital costs are expected to continue to decline in coming years and because Congress's extension of the wind production tax credit through 2019 is likely to accelerate the development of new wind projects over the next several years. **New wind projects totaling approximately 10,000 MW are planned between now and 2020.**<sup>127</sup> Thus, IEEFA correctly concludes, “we believe that

---

<sup>122</sup>ERCOT, *Report on the Capacity, Demand and Reserves (CDR) in the ERCOT Region, 2017-2026*, at 9 (Dec. 15, 2016), <http://www.ercot.com/content/wcm/lists/96607/CapacityDemandandReserveReport-Dec2016.pdf> (attached).

<sup>123</sup> *Id.*

<sup>124</sup>ERCOT State of the Grid Report (2015), at 21, [http://ercot.com/content/news/presentations/2016/2015\\_StateoftheGridReport.pdf](http://ercot.com/content/news/presentations/2016/2015_StateoftheGridReport.pdf).

<sup>125</sup>In its 2016 LTSA, ERCOT assumed that these units would retire in *all* scenarios and does not present information that would demonstrate that the retirement would be attributable to environmental mandates, as opposed to other factors. ERCOT, *2016 Long-Term System Assessment for the ERCOT Region*, [http://www.ercot.com/content/wcm/lists/89476/2016\\_Long\\_Term\\_System\\_Assessment\\_for\\_the\\_ERCOT\\_Region.pdf](http://www.ercot.com/content/wcm/lists/89476/2016_Long_Term_System_Assessment_for_the_ERCOT_Region.pdf) (attached).

<sup>126</sup>SIERRA CLUB, *The Gas Rush: Locking American into Another Fossil Fuel for Decades*, [http://content.sierraclub.org/naturalgas/sites/content.sierraclub.org.naturalgas/files/1466-Gas-Rush-Report\\_04\\_web.pdf](http://content.sierraclub.org/naturalgas/sites/content.sierraclub.org.naturalgas/files/1466-Gas-Rush-Report_04_web.pdf) (attached). See also Sierra Club, Planned Gas Plants, <http://content.sierraclub.org/naturalgas/gas-rush>; ERCOT, GIS Report April 2017, at IA Table <http://www.ercot.com/gridinfo/resource> (attached in part).

<sup>127</sup>ERCOT, GIS Report February 2017, <http://www.ercot.com/gridinfo/resource> (attached in part).

future ERCOT system reserve margins are likely to be higher, perhaps substantially higher, than the Update suggests.”<sup>128</sup> And again, in any event, there would no basis for directly attributing coal retirements to this proposed rule in any of ERCOT’s LTSA scenarios.

The nationwide reliability monitor, NERC, reiterated that even with significant unit retirements, and assuming no replacement capacity in most scenarios, ERCOT would maintain a reserve margin of over 11% through 2031. While that highly conservative – indeed, unrealistic – is below ERCOT’s target reserve margin, even in that case, there is no indication that a slightly lower reserve margin would actually result in a loss of grid reliability of the type raised by opponents of the proposal.<sup>129</sup>

The Brattle Group reviewed the reliability risks associated with likely coal plant retirements in Texas, including both resource adequacy and localized reliability issues, and “conclude[d] that coal plant retirements are unlikely to impact ERCOT’s reliability. . . [T]here are safeguards in place to ensure that reliability issues that may arise can be addressed by ERCOT and the state.”<sup>130</sup>

**E. Localized Reliability Issues Such as Transmission Line Overloading or Instability Are Unlikely and Can Be Addressed Through ERCOT’s Standard Procedures.**

Resource adequacy -- making sure that the total capacity available to the grid is sufficient to serve total electric demand -- is only one element of grid reliability. ERCOT is also responsible for planning for adequate local transmission resources such that the grid remains operationally balanced and that transmission lines can handle demand according to dynamic power flow conditions. ERCOT has a number of planning processes to maintain this type of grid reliability. For example, ERCOT conducts annual Long-Term System Assessments, which specifically consider the possibility of significant retirements and related transmission needs. As a result of such planning, new transmission lines built in 2016 and 2017 will total nearly 1,000 miles, and approximately 1900 miles will be rebuilt, upgraded, or reconductored in that time frame.<sup>131</sup>

ERCOT also conducts transmission studies in response to individual retirement notifications. For example, in response to notifications from Luminant indicating that certain units covered by the Rule (Martin Lake units 1, 2, and 3 and Monticello units 1 & 2) would be operating only seasonally, ERCOT reviewed whether these plants should be eligible for

---

<sup>128</sup> IEFFA Report at 35.

<sup>129</sup> North American Electric Reliability Corporation (“NERC”), 2016 Long-Term Reliability Assessment (Dec. 2016), <http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2016%20Long-Term%20Reliability%20Assessment.pdf> (attached).

<sup>130</sup> The Brattle Group, Reliability Risks Due to Coal Retirement at ERCOT, at Executive Summary (Dec. 7, 2016) (attached).

<sup>131</sup> ERCOT, *Transmission Project and Information Tracking* (“ImprovementCostSummary” Tab), <http://www.ercot.com/gridinfo/planning> (Feb. 2017).

“reliability must-run status” and found that there would be no reliability problems resulting from seasonal mothballing of these plants.<sup>132</sup>

In the event that ERCOT does determine that a reliability problem would be triggered, it has authority to issue a temporary reliability-must-run (“RMR”) contract to keep the resource on line during peak hours as needed. ERCOT can issue an RMR contract only after a following a defined set of strict procedures set forth in its protocols and PUC rules and cannot extend the contract without evaluating alternatives to continuing to run the plants. Such contracts are very rare and are unpopular as they force others to bear the cost of maintaining a relatively expensive plant online. New protocols recently enacted ensure the RMR procedures are even more stringent to avoid unnecessary contracts.<sup>133</sup> Thus far, even with a rapidly changing grid, ERCOT has not had to issue RMR contracts for significant timeframes but instead has been able to balance the grid with other fixes.

ERCOT has not specifically studied the reliability impacts of Texas BART Proposal. As noted above, it has never publicly presented an economic analysis that studies which, if any, plants would choose to retire in lieu of scrubber upgrades or retrofits. However, in studying retirement scenarios, **ERCOT has consistently stated that the grid operator’s concern is with near-term, unplanned retirements without more than the minimum advance notice or any flexibility on the date of those retirements.**<sup>134</sup>

In evaluating potential future transmission needs in its December 2016 Constraints and Needs Report, ERCOT studied a scenario in which it assumes that *all* the affected Luminant units (Monticello, Big Brown, and Martin Lake) *and* Coletto Creek – nine total units at four plants totaling approximately 6GW capacity – all retire by 2022 without providing more than the minimum notice required.<sup>135</sup> Further narrowing the scenario, only “moderate” new resources are

---

<sup>132</sup> See *supra* note 107.

<sup>133</sup> ERCOT Nodal Protocols (May 1, 2017), <http://www.ercot.com/mktrules/nprotocols/current> (attached in part).

<sup>134</sup> See, e.g., ERCOT, *Report on Existing and Potential Electric System Constraints and Needs* (Dec. 2016), at 30-31 (passage quoted *infra* note 131) (attached); Mem. from Jeremy Fisher, Synapse Energy Economics to EPA, *Re: Assessing the December 2014 ERCOT Report on Environmental Regulations*, Docket ID No. EPA-R06-OAR-2014-0754-0087 at Doc. No. 131 (Sept. 8, 2015).

<sup>135</sup> ERCOT, *Report on Existing and Potential Electric System Constraints and Needs* (Dec. 2016), at 30-31 (“If the owners of these plants [*nine* units at Monticello, Big Brown, Martin Lake, and Coletto Creek] were to suspend operations, they would need to notify ERCOT at least 90 days before retiring or suspending operations of the generating unit. *If multiple* retirements occurred *within a short timeframe*, without early notice, loss of this capacity could result in localized grid reliability issues.”), [http://www.ercot.com/content/wcm/lists/89476/2016\\_Constraints\\_and\\_Needs\\_Report.pdf](http://www.ercot.com/content/wcm/lists/89476/2016_Constraints_and_Needs_Report.pdf) (attached). The current minimum notice of suspension of operations is 90 days. ERCOT Nodal Protocols, Section 3.14.1.1 (Apr. 5, 2017) (attached). The Public Utility Commission has proposed to extend the notice period to 150 days to improve ERCOT’s “ability to avoid uneconomic and unnecessary RMR service agreement” and is currently taking comment on the

added “around the region” as replacement power. **In that narrow set of circumstances, ERCOT determined that those simultaneous retirements could create localized grid issues in the Dallas Fort Worth area on peak use days.**<sup>136</sup> If this specific scenario were to occur, ERCOT would work to encourage appropriate transmission or other solutions, such as minor upgrades, rebuilds, new transmission lines, or relying on other types of grid services that can support voltage.<sup>137</sup> As explained by NERC, “[t]o address transmission issues caused by specific retiring units, ERCOT and its stakeholders would pursue necessary transmission infrastructure upgrades or other alternatives (such as installation of voltage control devices or interruptible load procurement) through ERCOT’s transmission planning and project review process.”<sup>138</sup>

Moreover, as a practical matter, it is not realistic that ERCOT would have only 90 days or thereabouts to plan for this many retirements all occurring in the same timeframe. **As the generators made clear in seeking a stay of the Oklahoma and Texas Reasonable Progress rule, it takes several years to plan and build a scrubber project.** Xcel indicated that it would need to prepare bid documents 4.5 years in advance of the deadline and apply for permits and regulatory approval (a public process) 4 years in advance.<sup>139</sup> Providing an even more attenuated timeline, Luminant’s contractor Sargent & Lundy stated that to upgrade both Monticello and Big Brown, construction (also public) would need to begin approximately four years prior to the deadline.<sup>140</sup> **Accordingly, if generators have not started these public processes several years before the compliance deadline, ERCOT and other market actors can reasonably begin to**

---

proposal. Public Utility Commission of Texas, Project 46369, Rulemaking Relating to Reliability Must-Run Service: Proposal for Publication of Amendment to §25.502 as Approved at the March 30, 2017 Open Meeting (Mar. 30, 2017), [http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/46369\\_51\\_934723.PDF](http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/46369_51_934723.PDF) (attached).

<sup>136</sup> Sierra Club and NPCA understand from conversations with ERCOT representatives that these issues would occur during the hottest summer days only.

<sup>137</sup> ERCOT uses a variety of “ancillary” services— *e.g.*, agreements with large electricity consumers that can quickly ramp up or down their use of electricity from the grid upon request—to complement generation-based strategies for balancing grid operations.

<sup>138</sup> North American Electric Reliability Corporation (“NERC”), *2016 Long-Term Reliability Assessment*, at 148 (Dec. 2016), <http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2016%20Long-Term%20Reliability%20Assessment.pdf> (attached).

<sup>139</sup> Appendix of Exs. in Support of Joint Motion to Stay by Luminant *et al.*, Decl. of David Hudson, *Texas v. EPA*, No. 16-60118, ¶17 (5th Cir. Mar. 3, 2016) (ECF Doc. 00513406105) (attached). We disagree with the timelines presented by Xcel and Luminant and have presented evidence that many companies are able to complete scrubber projects within three years or less. *See Stamper Report*. Thus, another reliability safeguard would be to set the deadline to meet emission limits at three or four years from the effective date of the rule. This would give EPA more flexibility to move the deadline back in the event a reliability problem is identified.

<sup>140</sup> Appendix of Exs. in Support of Joint Motion to Stay by Luminant *et al.*, Decl. of Andrew J. Carstens, *Texas v. EPA*, No. 16-60118, ¶¶15-16 (5th Cir. Mar. 3, 2016) (ECF Doc. 00513406105) (attached).

**incorporate retirement of these units into their planning, and the market will begin to react.**

ERCOT has presented no other information that retirement of BART-affected units would lead to grid reliability issues.<sup>141</sup> While ERCOT is the relevant grid expert, it would be arbitrary for EPA to rely on any ERCOT study for more than ERCOT has actually stated and studied. ERCOT by its nature must be highly conservative in its analyses, and does not have a crystal ball. Instead, until ERCOT understands what units will retire, what time frame the retirements will occur, and where replacement power is coming from, the grid planners cannot soundly judge what reliability issues may occur. ERCOT is clear that it is basing its analysis on “assumptions” about which units would retire, and not specifically studying or making predictions as to a causal relationship between the Texas BART Proposal, or any other rule, and such retirements. *We encourage EPA to discuss these matters with ERCOT directly to better understand what the grid operator has and has not predicted through its studies, rather than taking the generators’ descriptions of ERCOT studies at their word.*

**F. EPA May Establish a Process to Allow the Grid Operator to Issue RMR Contracts In the Unlikely Event that Local Reliability Issues Arise as a Result of Multiple BART Units Announcing Retirement Within a Short Timeframe.**

If EPA would like to protect against the scenario described above in which many generators announce retirement simultaneously, without early notice, and without replacement resources that would balance the grid, it can do so without weakening the proposed BART limits or undermining the requirements of the Regional Haze program. We propose the following practical solution.

**Providing ERCOT with the ability to maintain the operation of a small subset of units past the current regulatory deadline in the event of an identified reliability need at the time of retirement announcement, at the control and request of the grid operator, and**

---

<sup>141</sup> In October 2015, ERCOT put forth a hypothetical scenario where plants impacted by the Oklahoma and Texas Reasonable Progress Rule all retire between 2019 and 2021 and are not replaced with resources in the same zones as the retiring plants. This study included a number of units not impacted by the Texas BART Proposal, was (in ERCOT’s words) “not intended to evaluate the viability of specific units,” failed to adequately consider replacement resources, and did not consider what kinds of solutions might be available to address potential transmission issues. ERCOT, Transmission Impact of the Regional Haze Environmental Regulation, [http://www.ercot.com/content/wcm/key\\_documents\\_lists/76860/Transmission\\_Impact\\_of\\_the\\_Regional\\_Haze\\_Environmental\\_Regulation\\_Oct\\_RPG.pdf](http://www.ercot.com/content/wcm/key_documents_lists/76860/Transmission_Impact_of_the_Regional_Haze_Environmental_Regulation_Oct_RPG.pdf). Therefore, it does not provide a basis for reliability concerns about the Texas BART Proposal, and it would be arbitrary for EPA to rely on it in this rulemaking. See also Cyrus Reed, ERCOT’s Analyses of Haze Pollution and Clean Power Plan Safeguards More Like Academic Exercises Than Likely Outcomes (Oct. 28, 2015), <http://www.sierraclub.org/texas/blog/2015/10/ercot-s-analyses-haze-pollution-and-clean-power-plan-safeguards-more-academic>.

**subject to the constraints of the standard RMR process, would eliminate reliability concerns.**

As discussed above, while rare and used only as a last resort, ERCOT typically has the authority to order a retiring plant to continue operating past its intended retirement date pursuant to an RMR contract to allow time to implement transmission and other solutions to localized reliability issues.<sup>142</sup> However, if ERCOT ordered an RMR that extended a BART unit's operation past the compliance deadline where the unit had not upgraded its SO<sub>2</sub> controls, there would be a conflict between the RMR and the plant's BART compliance requirements. In the final rule, EPA could commit to maintaining ERCOT's ability to enact RMRs without a regulatory conflict as follows.

If one or more of the BART units provides its notice of suspension to ERCOT, and ERCOT determines that all the applicable requirements for an RMR are met, but that the RMR contract for a unit or units would extend past the BART deadline, ERCOT would immediately provide EPA with its RMR determination and request that EPA reevaluate the compliance deadline to extend it to the end-date of the RMR. Upon receiving notice from ERCOT and confirming with a generator that it intends to retire, EPA could revise its BART determination for the plant to take into account its drastically shortened remaining useful life. EPA could include the revised BART determination in a FIP revision that lifts the immediate BART deadline; to justify the revised analysis, EPA would need to include an enforceable retirement date for the unit in a revised FIP – for example, 18 months from the date of the revision, or by the termination of the RMR contract, whichever is sooner. In effect, EPA would reassess BART with a new remaining useful life based on the new retirement commitment for a specified unit.

Between the limits in ERCOT's own protocols as to when it can issue an RMR, the wide range of alternatives, and general opposition from market participants to the use of RMRs, it is highly unlikely that ERCOT would issue an RMR for more than a year or so. ERCOT's protocols require it to "minimize the use of RMR Units as much as practicable subject to the other provisions of these Protocols." In addition, no later than 90 days after the execution of an RMR Agreement, ERCOT must report to its Board a list of feasible alternatives that may, at a future time, be more cost-effective than the continued renewal of the existing RMR Agreement.<sup>143</sup> If a cost-effective alternative to the service provided by the RMR Unit is

---

<sup>142</sup> "RMR [Reliability Must Run] Service is the use by ERCOT, under contracts with Resource Entities, of capacity and energy from Generation Resources that otherwise would not operate and that are necessary to provide voltage support, stability or management of localized transmission constraints under applicable reliability criteria, where market solutions do not exist." ERCOT Protocol Section 3.14.1.

<sup>143</sup> Through the ERCOT System planning process, ERCOT must develop a list of potential alternatives to the service provided by the RMR Unit. At a minimum, the list of potential alternatives that ERCOT must consider include: building new or expanding existing transmission facilities, installing voltage control devices, soliciting or buying by auction interruptible Load from Retail Electric Providers (REPs), or extending the existing RMR Agreement on an annual basis. ERCOT Protocol 3.14.1.4.



identified, ERCOT “shall” provide a proposed timeline to “study and/or implement” the alternative. (ERCOT Protocol 3.14.1.4.)

ERCOT has issued only one RMR contract since 2011, and only 14 since it was founded in 1970 while operating a grid with hundreds of generating units. In June 2016, ERCOT issued an RMR contract for NRG’s Greens Bayou gas plant – which gave notice of an intended June 27, 2016 retirement date –for the term of June 1, 2016 to June 30, 2018. However, in October 2016, ERCOT reviewed its RMR determination and found that the contract was needed only until July 31, 2017.<sup>144</sup>

**If EPA commits to working with ERCOT as described above, EPA can ensure that reliability issues would be avoided while also ensuring that generators cannot simply use vague and undocumented reliability concerns as an excuse for delaying or avoiding much-needed pollution controls.** Any shifting of the regulatory deadlines in a FIP revision would be based on an enforceable retirement commitment and rigorous analysis undertaken by ERCOT in response to a generator’s notice of suspension and in line with stringent RMR protocols. Furthermore, as ERCOT is required to minimize use of the RMR contract, and has every incentive – and pressure from market participants – to minimize costs, the plant would be called upon to run only during the peak summer hours when most needed. Accordingly, we expect that EPA’s commitment to this process would be unlikely to significantly extend the lives or air pollution from the plants subject to BART, if it is even used at all.

## **V. RELIANCE ON CSAPR TO SATISFY THE NO<sub>x</sub> BART REQUIREMENTS IS UNLAWFUL.**

EPA’s proposal to rely on CSAPR as an alternative to BART for NO<sub>x</sub>, 82 Fed. Reg. at 946, is unlawful for four reasons. First, EPA’s proposal exempts sources from BART requirements without complying with the statutory prerequisites for such an exemption. Second, even if EPA could relieve sources of the obligation to install BART controls, the CSAPR-Better-than-BART Rule was flawed when it was issued, and is now based on outdated assumptions in any event. Third, EPA’s attempt to update the CSAPR-Better-than-BART Rule is a qualitative analysis, lacking the quantitative modeling in the original rule, and falls far short of demonstrating that CSAPR still makes greater reasonable progress than BART. Fourth, it is unlawful to use the seasonal NO<sub>x</sub> emission limits in CSAPR to satisfy BART, which requires continuous use of pollution controls.

### **A. It is Unlawful to Exempt a Source from Source-Specific BART Without Going Through the Statutory Exemption Process.**

EPA’s proposal is unlawful because it exempts sources from installing BART controls without going through the exemption process Congress prescribed. The visibility protection provisions of the Clean Air Act include a “requirement” that certain sources “install, and operate” BART controls. 42 U.S.C. § 7491(b)(2)(A). Congress specified the standard by

---

<sup>144</sup> RMR Study Update for Greens Bayou Unit 5 (Notice date Feb. 27, 2017), [http://www.ercot.com/services/comm/mkt\\_notices/archives/1219](http://www.ercot.com/services/comm/mkt_notices/archives/1219) (attached).

which sources could be exempted from the BART requirements, which is that the source is not “reasonably [] anticipated to cause or contribute to a significant impairment of visibility” in any Class I area. *Id.* § 7491(c)(1). Appropriate federal land managers must concur with any proposed exemption. *Id.* § 7491(c)(3). EPA has not demonstrated that any of the Texas EGUs subject to BART meet the standards for an exemption, nor has EPA obtained the concurrence of federal land managers. Therefore, EPA must require source-specific BART for each power plant subject to BART.

**B. The 2012 Better-than-BART Rule Was Flawed When It Was Issued and Is Now Based on Outdated Assumptions.**

Even if EPA could use a BART alternative without going through the statutory exemption process, the CSAPR-Better-than-BART Rule was is fatally flawed, and, even if it were valid in 2012, is now woefully outdated. EPA’s regulations purport to allow the use of an alternative program in lieu of source-specific BART only if the alternative makes “greater reasonable progress” than would BART. 40 C.F.R. § 51.308(e)(2). To demonstrate greater reasonable progress, a state or EPA must show that the alternative program does not cause visibility to decline in any Class I area and results in an overall improvement in visibility relative to BART at all affected Class I areas. *Id.* § 51.308(e)(3)(i)-(ii).

As we explained in detail in our 2012 comments, EPA compared CSAPR to BART in the Better-than-BART Rule by using CSAPR allocations that are more stringent than now required as well as by using presumptive BART limits that are less stringent than are actually required under the statute. EPA, Letter from McCrystie Adams & Michael Hiatt, Earthjustice to EPA, Docket ID No. EPA-HQ-OAR-2011-0729 at 13-16 (Feb. 28, 2012) (attached). Even under EPA’s skewed 2012 comparison, CSAPR achieves barely more visibility improvement than BART at Big Bend and Guadalupe Mountains. The NO<sub>x</sub> emissions allowed under CSAPR from Texas EGUs are higher than would be allowed under BART. *Id.* at 17-18. This was true even before EPA revised CSAPR to increase the emissions allocations for all Texas EGUs.

Even if, for the sake argument, it were assumed that the CSAPR-Better-than-BART Rule were valid in 2012, it is based on assumptions for both CSAPR and BART emissions which are now woefully outdated. The CSAPR-Better-than-BART Rule’s reliance on presumptive BART emission limits is now outdated, given that EPA has issued or approved source-specific BART determinations for dozens of sources since 2012. In particular, for Texas sources, EPA has proposed SO<sub>2</sub> BART limits which are far below the presumptive BART limits EPA used in the Better-than-BART Rule. For units other than Martin Lake, EPA proposes SO<sub>2</sub> BART limits of 0.04 to 0.06 lbs/MMBtu, 82 Fed. Reg. at 949, which are well below the presumptive SO<sub>2</sub> BART limit of 0.15 lbs/MMBtu, 40 C.F.R. Part 51, App. Y, Section IV.E.4; even at Martin Lake, EPA proposes limits of 0.11 to 0.12, 82 Fed. Reg. at 949, which are still below presumptive BART for SO<sub>2</sub>.

Similarly, the CSAPR-Better-than-BART Rule is based on a version of CSAPR that no longer exists. Accordingly, any conclusion that EPA made in the 2012 Better than BART rule regarding whether CSAPR achieves greater reasonable progress than BART is no longer valid. Since 2012, EPA has significantly changed the allocations and the compliance deadlines for

CSAPR. Of particular relevance here, after 2012, EPA dramatically increased the CSAPR allocations for every covered EGU in Texas. 77 Fed. Reg. 10,324 (Feb. 21, 2012), Final Revisions Rule State Budgets and New Units Set-Asides TSD at 3. EPA later withdrew the February 21, 2012 rule revision, 77 Fed. Reg. 28,785 (May 16, 2012), but issued a new rule that included both the changes in the February 21, 2012 rule as well as additional changes to state budgets. 77 Fed. Reg. 34,830 (June 12, 2012).

By the time EPA finalized the Better-than-BART-Rule in June 2012, EPA had changed the state emissions budgets by tens of thousands of tons, yet EPA proceeded to finalize the Better-than-BART Rule based solely on the emissions budgets in the original, 2011 CSAPR rule. EPA also extended the compliance deadlines by three years, such that the phase 1 emissions budgets take effect in 2015-2016 and the phase 2 emissions budgets take effect in 2017 and beyond. 79 Fed. Reg. 71,663 (Dec. 3, 2014); *see also* 79 Fed. Reg. at 74,853.

Even more changes to CSAPR have occurred as a result of the D.C. Circuit's decision in *EME Homer City II Generation*, including the proposed withdrawal of Texas from the annual NO<sub>x</sub> and SO<sub>2</sub> trading programs, *see* 81 Fed. Reg. 78,954 (Nov. 10, 2016). Given the large number of final BART determinations made since 2012, and the significant changes to CSAPR budgets since 2012, it is arbitrary and capricious to rely on the outdated assumptions about emissions which were made in the CSAPR-Better-than-BART Rule.

### **C. EPA's 2016 "Sensitivity Analysis" is a Back-of-the-Envelope Calculation That Does Not Justify Reliance on CSAPR.**

EPA's November 2016 "Sensitivity Analysis" purports to update its CSAPR-Better-than-BART analysis to show that CSAPR still makes greater reasonable progress than BART, 81 Fed. Reg. 78,954 (Nov. 10, 2016). We agree with EPA that the 2016 Sensitivity Analysis is not a proper legal basis for demonstrating that CSAPR makes greater reasonable progress than BART, because the 2016 analysis is merely a proposed rule. *See* 82 Fed. Reg. at 946. It would be unlawful to issue a final BART rule relying on CSAPR to satisfy the NO<sub>x</sub> BART requirements in the absence of a final rule demonstrating that the CSAPR Update Rule makes greater reasonable progress than BART.

To demonstrate that CSAPR makes greater reasonable progress than BART, EPA must show that (1) visibility does not decline in any Class I area under CSAPR, and (2) there is an overall improvement in visibility, based on comparing the average differences between CSAPR and BART across all affected Class I areas. 40 C.F.R. § 51.308(e)(3). EPA's analysis falls well short of making such a demonstration, as we noted in our prior comments on EPA's 2016 Sensitivity Analysis. *See* Letter from David Baron to EPA, Docket ID No. EPA-HQ-OAR-2016-0598-0014 (Jan. 9, 2017) (attached).

EPA's 2016 analysis is markedly different from the CSAPR-Better-than-BART Rule, which relied on quantitative modeling of electric power sector emissions, using the Integrated Planning Model, and quantitative modeling of visibility at all affected Class I areas, using CAMx. 76 Fed. Reg. 82,219, 82,227 (Dec. 30, 2011). Instead of updating that modeling, EPA's 2016 analysis consists of a back-of-the-envelope, qualitative discussion. This is wholly

insufficient. There have been enormous changes in the electric power sector since EPA issued the Better-than-BART Rule in 2012, including changes in regulatory requirements (*e.g.*, CSAPR revisions, NAAQS updates, etc.) and changes in unit operations caused by changes in fuel prices, demand, etc. Given that EPA believed in 2012 that it was necessary to conduct quantitative modeling of power sector emissions and the visibility impacts of such emissions, EPA must update that modeling in order to prove that CSAPR still makes greater reasonable progress than BART.

EPA's failure to update the modeling upon which it relied in the 2012 Better than BART Rule is even more arbitrary given EPA's assumption, in the 2016 Sensitivity Analysis, that no trading of CSAPR allowances would occur across state lines. The Sensitivity Analysis uses "emissions that would occur if the state budgets are increased as proposed assuming that all of the additional allowances are used by sources in the respective state (*i.e.*, we did not re-model trading)." EPA, Memorandum, Sensitivity Analysis Accounting for Increases in Texas and Georgia Transport Rule State Emissions Budgets, Docket ID No. EPA-HQ-OAR-2011-0729-0323, at 2 (May. 29, 2012) (attached). This assumption bears no relationship to reality, in which CSAPR—both the original rule, and the updated rule—expressly allows trading across state lines. EPA's failure to create a realistic depiction of the geographic distribution of emissions under the updated CSAPR budgets dooms its Sensitivity Analysis, as EPA must demonstrate that visibility does not decline in any Class I area, 40 C.F.R. § 51.308(e)(3)(i). Trading across state lines can increase emissions from particular sources, which in turn can degrade visibility at particular Class I areas. Having failed to consider how inter-state trading will affect the distribution of emissions under CSAPR, EPA cannot possibly show that visibility will not decline in any Class I area under CSAPR, *see* 40 C.F.R. § 51.308(e)(3)(i).

Similarly, EPA failed to account for intra-state trading under CSAPR. Even assuming all changes in budgets would apply only within the affected state – that is, assuming interstate emissions trading did not change at all – EPA has not accounted for trading within the states. A 20% reduction in statewide emissions does not imply that each unit will reduce its emissions by 20%; indeed, some units could increase emissions while statewide emissions went down. EPA does not seem to have accounted for this in its analysis. Thus, even within EPA's scenario whereby no changes to reflect current conditions need to be made, EPA's *ad hoc* analysis fails to demonstrate that the "Better-than-BART" test above would be met because EPA has failed to account for changes in emissions distribution based on the altered budgets.

In addition, EPA cannot simply assume that the visibility improvement averaged across all Class I areas, 40 C.F.R. § 51.308(e)(3)(ii), will still be better under the updated CSAPR than under BART. Without updated visibility modeling, EPA has no data to demonstrate that the second prong of the BART alternative test will be met in spite of the substantial changes in coverage and budgets under CSAPR.

**D. It is Unlawful to Use Seasonal NO<sub>x</sub> Limits Under CSAPR to Satisfy BART, which Requires Continuous Operation of Controls.**

Under the updated version of CSAPR, Texas will not have allowances for annual NO<sub>x</sub> emissions. *See* 81 Fed. Reg. at 78,955 (proposing to withdraw the FIP provision requiring Texas

sources to participate in the CSAPR NO<sub>x</sub> Annual Trading Program). Instead, Texas will have a CSAPR budget for NO<sub>x</sub> for only the ozone season, which runs a few months each year. *Id.* at 78,955 n.4 (“This proposal has no effect on any CSAPR FIP requirements for Texas EGUs concerning ozone-season NO<sub>x</sub> emissions.”). But BART is not a seasonal requirement; BART requires continuous operation of pollution controls. “The determination of BART must be based on an analysis of the best system of *continuous* emission control technology available and associated emission reductions achievable for each BART-eligible source that is subject to BART within the State.” 40 C.F.R. § 51.308(e)(1)(ii)(A). It violates EPA’s regulations to use seasonal emissions reductions under CSAPR to satisfy the BART requirement to install and operate “continuous emission control technology.” *Id.*

## **VI. EPA CANNOT LAWFULLY OR RATIONALLY RELY ON EXECUTIVE ORDER 13,771 TO INFLUENCE DEVELOPMENT OF THE FINAL RULE.**

EPA cannot lawfully or rationally rely on the post-proposal Executive Order 13,771, 82 Fed. Reg. 9339 (Feb. 3, 2017), in this rulemaking, nor can the agency allow that order to influence development of the final rule. A number of groups (represented by Earthjustice) have challenged that executive order in court as unlawful, arbitrary, and capricious. As detailed in Section I.A above, Congress laid out specific requirements for implementing BART in the Clean Air Act. An executive order cannot override a statute, limit the authority delegated and the legal responsibilities provided to the EPA Administrator by federal law, add factors that are impermissible under the statute, or delay statutorily required agency action. *See, e.g., In re: United Mine Workers of Am. Int’l Union*, 190 F.3d 545, 551 (D.C. Cir. 1999). In addition, weakening or delaying improvements contained in this proposed rule, or any other public health and safety improvements, due to the executive order would be contrary to the public health and environmental responsibilities and requirements of EPA to achieve natural visibility in Class I areas. Finally, it would be unlawful for EPA to consider or apply that executive order in any way in this rulemaking without providing the requisite public notice and opportunity for comment that the Clean Air Act requires, 42 U.S.C. § 7607(d)(3)-(7), (h), because EPA’s proposal does not include any mention of Executive Order 13,771.

Further, as explained in Section I.C above, the Texas BART Rule is both statutorily and judicially required and is therefore exempt from EO 13,771 on its face. The EO applies only to the extent permitted by law, and recent OMB Guidance has confirmed that “agencies are still required to comply with their statutory obligations.” Mem. from Dominic J. Mancini, Office of Information and Regulatory Affairs, M-17-21, *Guidance Implementing Executive Order 13771*, at 8 Q.18 (Apr. 5, 2017) [hereinafter, “OMB Guidance”]. The Clean Air Act requires BART as a mandatory measure that must be implemented to achieve reasonable progress toward restoration of natural visibility conditions. 42 U.S.C. § 7491(b)(2)(A). And since Texas has not submitted a plan for addressing EGU BART, the CAA requires EPA to develop a FIP, and EPA is under a court order to do so by September 9, 2017, *see* Order, *NPCA v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. Dec. 15, 2015) (ECF Doc. 86). Therefore, by the terms of the Executive Order, the Texas BART Proposal is exempt from application of EO 13,771. *See* OMB Guidance Q.34.

Should EPA determine that issuance of a Texas BART Rule would require offset pursuant to the executive order, then EPA must consider the significant public health economic

benefits and other economic that will accrue under the rule, as described in Section III above and in Dr. Thurston's attached report.

## CONCLUSION

For the reasons explained above, Sierra Club, NPCA, and Earthjustice urge EPA to fully satisfy all legal requirements and protect air quality in this important rulemaking Texas regional haze. We welcome the opportunity to provide any additional information that may be useful as you work to finalize action on this important rule.

Sincerely,



---

Mary Whittle  
Earthjustice  
3904 Bonnell Drive  
Austin, TX 78731  
(512) 537-2791  
mwhittle@earthjustice.org

Matthew Gerhart  
3639 N. Clayton St.  
Denver, CO 80205  
(510) 847-7721  
megerhart@gmail.com

Stephanie Kodish  
National Parks Conservation Association  
706 Walnut Street, Suite 200  
Knoxville, TN 37902  
(856) 329-2424 ext. 28  
skodish@npca.org

Nathan Miller  
National Parks Conservation Association  
8 S. Michigan Ave., Suite 2900  
Chicago, IL 60603  
(312) 263-0111  
nmiller@npca.org

Joshua Smith  
Sierra Club  
2101 Webster Street, Suite 1300  
Oakland, CA 94612  
(415) 977-5560  
joshua.smith@sierraclub.org

Elena Saxonhouse  
Sierra Club  
2101 Webster Street, Suite 1300  
Oakland, CA 94612  
(415) 977-5765  
elena.saxonhouse@sierraclub.org

**EPA-R06-OAR-2016-0611**

**List of Documents Accompanying Comments  
Submitted by Earthjustice, National Parks Conservation Association,  
and Sierra Club on May 5, 2017.**

- 1) Dr. H. Andrew Gray, Visibility And Health Modeling, Technical Support Document to Comments of Conservation Organizations (May 5, 2017) (*Docket Tracking No. 1k1-8w7w-of4x*)
- 2) Victoria R. Stamper, Technical Support Document to Comments of Conservation Organizations (May 3, 2017) (*Docket Tracking No. 1k1-8w7u-im9p*)
- 3) Written Report of George D. Thurston Regarding the Public Health Benefits of EPA's Proposed Rulemaking Regarding Best Available Retrofit Technology For Texas Sources Under The Regional Haze Rule (May 4, 2017) (*Docket Tracking No. 1k1-8w7u-96by*)

\* \* \*

- 4) Daniel Cohan, *Addressing pollution from legacy coal power plants in Texas* (June 2013)
- 5) Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States (May 2014)
- 6) EPA, Regulatory Impact Analysis for Final Clean Air Visibility Rule of the Guidelines for Best Available Retrofit Technology (BART) Determinations Under the Regional Haze Regulations, EPA-452/R-05-004, Docket ID No. EPA-HQ-OAR-2002-0076-0496 (June 2005)
- 7) Letter from David Baron to EPA, Docket ID No. EPA-HQ-OAR-2016-0598-0014 (Jan. 9, 2017)
- 8) Letter from Abigail Dillen, Docket No. EPA-HQ-OAR-2011-0729 (Mar. 27, 2012)
- 9) Letter from Jocelyn D'Ambrosio to EPA, Docket No. EPA-HQ-OAR-2011-0729 (Feb. 28, 2011)
- 10) D. Howard Gebhart, Technical Review of US Environmental Protection Agency Dispersion Modeling Supporting the "Transport Rule is Better than BART" Analysis, Docket No. EPA-HQ-OAR-2011-0729 (Feb. 21, 2012)
- 11) ERCOT Nodal Protocols, Section 3.14.1.1 (May 1, 2017)
- 12) Decs. in Support of Sierra Club and NPCA's Response in Opposition to Motions to Stay, *Texas v. EPA*, No. 16- 60118 (5th Cir. Apr. 7, 2016) (ECF Doc. 00513457087)

- (includes Decl. of Dr. Robert Bullard, Decl. of Johnathan Hladik, and Decl. of David Schlissel)
- 13) Decs. in Support of Mot. for Leave to Intervene by Sierra Club and NPCA, *Texas v. EPA*, No. 16-60118 (5th Cir. Mar. 10, 2016) (ECF Doc. 00513414795)
  - 14) Conservation Groups' Opening Brief, *Util. Air Regulatory Grp. v. EPA*, No. 12-1342 (D.C. Cir. Mar. 17, 2017) (ECF Doc. 1666640)
  - 15) Luminant Mot. to Stay, *EME Homer City Generation v. EPA*, No. 11-1315 (D.C. Cir. Sept. 15, 2011) (Doc. No. 1329866)
  - 16) Supplemental Notice by EPA Regarding EPA's Schedule For Completing Final Action On A Good Neighbor Federal Implementation Plan For Texas With Respect To The 1997 PM2.5 Standards, No. 1:10-cv-01541-CKK (D.D.C. Dec. 5, 2016) (ECF Doc. 87)
  - 17) Exs. in Support of EPA's Opp. to Mots. for Stay, *Texas v. EPA*, No. 16-60118 (Apr. 7, 2016) (ECF Doc. 00513457037)
  - 18) Mem. from J. McCabe, Acting Assistant Administrator, EPA to Regional Air Division Directors, *Re: The USEPA's Plan for Responding to the Remand of the Cross-State Air Pollution Rule Phase 2 SO2 Budgets for Alabama, Georgia, South Carolina, and Texas* (June 27, 2016)
  - 19) EPA's Fact Sheet for the Open House on EPA's Clean Air Plan Proposal for Texas Regional Haze
  - 20) ERCOT, GIS Report February 2017, <http://www.ercot.com/gridinfo/resource> (excerpt)
  - 21) Letter from M. Wilson, Office of Air, Texas Commission on Environmental Quality to K. Mireles, Luminant Generation Co., LLC, Permit No. 56445 (Dec. 16, 2011) (Big Brown Permit)
  - 22) Letter from M. Wilson, Office of Air, Texas Commission on Environmental Quality to K. Mireles, Luminant Generation Co., LLC, Permit No. 2401 (Monticello Permit)
  - 23) EPA, Letter from McCrystie Adams & Michael Hiatt, Earthjustice to EPA, *Re: Proposed Partial Regional Haze FIP for Texas Exempting BART-Eligible Texas EGUs from BART Based on EPA's Determination that the Cross-State Air Pollution Rule is "Better than BART"*, Docket ID No. EPA-HQ-OAR-2011-0729 (Feb. 28, 2012)
  - 24) "Cost Effectiveness and Visibility in BART Determinations" spreadsheet
    - A. 2014-01 Air Quality Modeling Protocol WY FIP EPA-R08-OAR-2012-0026-0253
    - B. BART\_Muskogee\_Final011810
    - C. BART\_Sooner\_Final011810



- D. EPA-R06-OAR-2010-0190-0067
  - E. EPA-R08-OAR-2015-0463-0012
  - F. Final Oklahoma Regional Haze SIP 2-4-10
- 25) EPA, Cross-State Air Pollution Rule (CSAPR)—Basic Information, <https://www.epa.gov/csapr/cross-state-air-pollution-rule-csapr-basics>
  - 26) EPA, Sulfur Dioxide Basics (last updated Aug. 16, 2016) <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>
  - 27) EPA—Particulate Matter Basics, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>
  - 28) Appendix of Exs. in Support of Joint Motion to Stay by Luminant *et al.*, Decl. of David Hudson, *Texas v. EPA*, No. 16-60118 (5th Cir. Mar. 3, 2016) (ECF Doc. 00513406105)
  - 29) Appendix of Exs. in Support of Joint Motion to Stay by Luminant *et al.*, Decl. of Andrew J. Carstens, *Texas v. EPA*, No. 16-60118 (5th Cir. Mar. 3, 2016) (ECF Doc. 00513406105)
  - 30) NPS, *Understanding Haze in Big Bend National Park*, [http://www.nps.gov/bibe/learn/nature/upload/Bravo\\_Fact\\_Sheet.pdf](http://www.nps.gov/bibe/learn/nature/upload/Bravo_Fact_Sheet.pdf)
  - 31) Ceres, *New Jobs – Cleaner Air: Employment Effects Under Planned Changes to the EPA’s Air Pollution Rules 1–3* (2011), <http://tools.ceres.org/resources/reports/new-jobs-cleaner-air/view>
  - 32) Decl. of William Steinhurst, *EME Homer City Generation v. EPA*, No. 11-1315 (D.C. Cir. Oct. 6, 2011) (Doc. No. 1334068)
  - 33) Babcock & Wilcox, B&W Awarded Construction Contract For AEP SWEPSCO Power Plant in Arkansas, <http://www.babcock.com/en/news/bw-awarded-construction-contract-for-aep-swepco-power-plant-in-arkansas>
  - 34) Daniel J. Stynes, Mich. State Univ., *Economic Benefits to Local Communities from National Park Visitation and Payroll, 2010* (2011), <https://www.nature.nps.gov/socialscience/docs/NPSSystemEstimates2010.pdf>
  - 35) NPS, National Park System – Summary: 1990 to 2008 (in 2008, National Park Service units received over 274 million visits, accounting for over \$2.5 billion in expenditures and revenue), <ftp://ftp.census.gov/library/publications/2010/compendia/statab/130ed/tables/11s1251.pdf>
  - 36) Jared Hardner & Bruce McKenney, Hardner & Gullison, *The U.S. National Park System, An Economic Asset at Risk* (2006)

- 37) Nat'l Park Serv, *2016 National Park Visitor Spending Effects; Economic Contributions to Local Communities, States, and the Nation* (Apr. 2017), <https://www.nps.gov/subjects/socialscience/vse.htm>
- 38) Abt Assocs. Inc., *Out of Sight: The Science and Economics of Visibility Impairment* (2000), <http://www.abtassociates.com/reports/ES-clear.pdf>
- 39) EPA, Effects of Acid Rain, <https://www.epa.gov/acidrain/effects-acid-rain> (last updated on Mar. 2, 2017)
- 40) NPS, Nitrogen Deposition: Issues and Effects in Rocky Mountain National Park (2005), [http://www.nps.gov/romo/parkmgmt/upload/romo\\_n\\_fact\\_final.pdf](http://www.nps.gov/romo/parkmgmt/upload/romo_n_fact_final.pdf)
- 41) National Park Service, NPS Critical Loads and Deposition, <https://www.nature.nps.gov/air/Studies/criticalloads/>
- 42) EPA, Ground-level Ozone – Ecosystem Effects, <https://www.epa.gov/ozone-pollution/ecosystem-effects-ozone-pollution> (last updated on Feb. 27, 2017)
- 43) S&P Global, *Allowance pricing unchanged in still-quiet CSAPR emissions market* (June 16, 2016), <https://www.platts.com/latest-news/coal/houston/allowance-pricing-unchanged-in-still-quiet-csapr-21734092>
- 44) *The ERCOT Region: Where Are We Headed?* Warren Lasher Director, System Planning (Oct. 22, 2016)
- 45) Solar Energy Industries Association, *Top 10 Solar States*, <http://www.seia.org/research-resources/top-10-solar-states>
- 46) ERCOT 2016 Long-Term System Assessment, [http://www.ercot.com/content/wcm/lists/89476/2016\\_Long\\_Term\\_System\\_Assessment\\_for\\_the\\_ERCOT\\_Region.pdf](http://www.ercot.com/content/wcm/lists/89476/2016_Long_Term_System_Assessment_for_the_ERCOT_Region.pdf)
- 47) RTO Insider, Overheard at the Infocast ERCOT Market Summit 2017 (Mar. 13, 2017), <https://www.rtoinsider.com/infocast-ercot-market-summit-2017/>
- 48) Potomac Economics, *2015 State of the Market Report for the ERCOT Wholesale Electricity Markets* (June 2016), [http://www.puc.texas.gov/industry/electric/reports/ERCOT\\_annual\\_reports/2015annualreport.pdf](http://www.puc.texas.gov/industry/electric/reports/ERCOT_annual_reports/2015annualreport.pdf)
- 49) Institute for Energy Economics and Financial Analysis, *The Beginning of the End: Fundamental Changes in Energy Markets are Undermining the Financial Viability of Coal-Fired Power Plants in Texas*, [http://ieefa.org/wp-content/uploads/2016/09/The-Beginning-of-the-End\\_September-2016.pdf](http://ieefa.org/wp-content/uploads/2016/09/The-Beginning-of-the-End_September-2016.pdf)

- 50) Andrew Engblom, SNL FINANCIAL, *Moody's says coal retirements the 'x-factor' as renewables pressure ERCOT prices* (Mar. 28, 2016)
- 51) David Schlissel, *IEEFA Data Byte: For Key Coal-Fired Plants in Texas, the Baseload Party Is Over* (Oct. 5, 2016), <http://ieefa.org/ieefa-data-byte-key-coal-fired-plants-texas-baseload-party/>
- 52) The Brattle Group, Reliability Risks Due to Coal Retirement at ERCOT (Dec. 7, 2016)
- 53) *Luminant Closing Mines, Laying off 80*, LONGVIEW NEWS JOURNAL, Feb. 29, 2017
- 54) Vistra Energy, Lender Presentation (Dec. 6, 2016)
- 55) Notices of Suspensions of Operations
- a. [http://lists.ercot.com/scripts/wa-ERCOT.exe?A2=NOTICE\\_CONTRACTS;570e3f91.1507](http://lists.ercot.com/scripts/wa-ERCOT.exe?A2=NOTICE_CONTRACTS;570e3f91.1507)
  - b. [http://lists.ercot.com/scripts/wa-ERCOT.exe?A3=ind1312&L=NOTICE\\_CONTRACTS&E=quoted-printable&P=5282&B=--000\\_3E87B359A497CF43BB3CB18506AECF8CD072BBCPW0013ercotcom&T=text%2Fhtml;%20charset=us-ascii&XSS=3&header=1](http://lists.ercot.com/scripts/wa-ERCOT.exe?A3=ind1312&L=NOTICE_CONTRACTS&E=quoted-printable&P=5282&B=--000_3E87B359A497CF43BB3CB18506AECF8CD072BBCPW0013ercotcom&T=text%2Fhtml;%20charset=us-ascii&XSS=3&header=1)
  - c. [http://lists.ercot.com/scripts/wa-ercot.exe?A2=NOTICE\\_OPERATIONS;f91d721d.1210](http://lists.ercot.com/scripts/wa-ercot.exe?A2=NOTICE_OPERATIONS;f91d721d.1210)
- 56) Energy Futures Holding Corporation SEC Form 10-K for the Fiscal Year Ended December 31, 2014, <https://www.sec.gov/Archives/edgar/data/1023291/000102329116000017/efh-12312015x10k.htm>
- 57) Energy Futures Holding Corporation SEC Form 10-K for the Fiscal Year Ended December 31, 2015, <https://www.sec.gov/Archives/edgar/data/1023291/000102329115000003/efh-12312014x10k.htm>
- 58) Terrence Henry, State Impact Texas, *Why the Texas Grid May Need a Coal Plant to Keep Running This Winter* (Oct. 21, 2012), <https://stateimpact.npr.org/texas/2012/10/01/why-the-texas-grid-may-need-a-coal-plant-to-keep-running-this-winter/>
- 59) NRG Energy, Inc., Form 10-K for the Fiscal Year Ending December 31, 2015, <https://www.sec.gov/Archives/edgar/data/1013871/000101387116000022/a201510-k.htm>

- 60) Jordan Blum, HOUSTON CHRONICLE, Texas move makes Dynegy a major national player (Apr. 22, 2016), <http://www.houstonchronicle.com/business/energy/article/Texas-move-makes-Dynegy-a-major-national-player-7305048.php>
- 61) *Dynegy reports losses as it shuts down coal-fired power plants*, FUEL FIX (Feb. 23, 2017)
- 62) James Tong & Jon Wellinohoff, *A Basic Primer on Capital Investment Financing for Regulated Investor Owned Utilities* (Mar. 25, 2015), <http://www.utilitydive.com/news/a-basic-primer-on-capital-investment-financing-for-regulated-investor-owned/379165/>
- 63) Xcel Energy Inc., Form 10-K for the Fiscal Year Ended Dec. 31, 2015, <https://www.sec.gov/Archives/edgar/data/72903/000007290316000123/xcel1231201510-k.htm>
- 64) ERCOT, *Report on the Capacity, Demand and Reserves (CDR) in the ERCOT Region, 2017-2026* (Dec. 15, 2016), <http://www.ercot.com/content/wcm/lists/96607/CapacityDemandandReserveReport-Dec2016.pdf>
- 65) EPA, Fact Sheet – Final Amendments to the Regional Haze Rule and BART Guidelines, [https://www.epa.gov/sites/production/files/2016-02/documents/fs\\_2005\\_6\\_15.pdf](https://www.epa.gov/sites/production/files/2016-02/documents/fs_2005_6_15.pdf)
- 66) ERCOT, *2016 Long-Term System Assessment for the ERCOT Region*, [http://www.ercot.com/content/wcm/lists/89476/2016\\_Long\\_Term\\_System\\_Assessment\\_for\\_the\\_ERCOT\\_Region.pdf](http://www.ercot.com/content/wcm/lists/89476/2016_Long_Term_System_Assessment_for_the_ERCOT_Region.pdf)
- 67) SIERRA CLUB, *The Gas Rush: Locking American into Another Fossil Fuel for Decades*, [http://content.sierraclub.org/naturalgas/sites/content.sierraclub.org.naturalgas/files/1466-Gas-Rush-Report\\_04\\_web.pdf](http://content.sierraclub.org/naturalgas/sites/content.sierraclub.org.naturalgas/files/1466-Gas-Rush-Report_04_web.pdf)
- 68) North American Electric Reliability Corporation (“NERC”), 2016 Long-Term Reliability Assessment (Dec. 2016), <http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2016%20Long-Term%20Reliability%20Assessment.pdf>
- 69) ERCOT, GIS Report April 2017, <http://www.ercot.com/gridinfo/resource> (excerpt)
- 70) ERCOT, Report on Existing and Potential Electric System Constraints and Needs (Dec. 2016)
- 71) RMR Study Update for Greens Bayou Unit 5 (Notice date Feb. 27, 2017), [http://www.ercot.com/services/comm/mkt\\_notices/archives/1219](http://www.ercot.com/services/comm/mkt_notices/archives/1219)
- 72) EPA, Memorandum, Sensitivity Analysis Accounting for Increases in Texas and Georgia Transport Rule State Emissions Budgets, Docket ID No. EPA-HQ-OAR-2011-0729-0323, at 2 (May. 29, 2012)

Message

---

**From:** Jones, Gary [GJones@printing.org]  
**Sent:** 6/23/2017 7:58:57 PM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** marcik@sgia.org; dmonteleone@flexography.org; Kaitlin Rundle [krundle@printing.org]; Matthew Crownover [mcrownover@printing.org]; Dilki Kandamarachchi [dKandamarachchi@printing.org]  
**Subject:** Follow Up From This Week's Meeting With NAM  
**Attachments:** PrintSTEPevaluationreport082506.pdf

Samantha and Brittany:

It was a pleasure to meet both of you at this week's meeting hosted by NAM. One of the action items I had from the meeting was to provide you with information on the project we completed under EPA's Common Sense Initiative, the PrintSTEP Program, short for the Printers' Simplified Total Environmental Partnership. I have attached the evaluation report prepared by EPA which provides more details about the program and its successes.

As a brief introduction, the PrintSTEP concept was developed by a diverse group of stakeholders including EPA, industry, state, labor, environmental groups, and environmental justice representatives. Under PrintSTEP, printers voluntarily enter into a single enforceable agreement with their state environmental agency, having one central agency contact with whom the printers interact. PrintSTEP includes the requirements for waste water, hazardous waste, storm water, and air emissions that are all covered in one multi-media agreement with the state. PrintSTEP does not change the existing environmental emissions or release standards. Instead, it changes the process of implementing those standards to improve efficiency and environmental performance. PrintSTEP provides operational flexibility for the printing operation and reduces or eliminates agency interactions when changes in operations occur.

In order to test the PrintSTEP concept, it was piloted in New Hampshire and Missouri. In New Hampshire, the pilot was state-wide, while in Missouri, it focused on St. Louis.

The PrintSTEP program was modeled after an existing program that was initiated in Massachusetts called the Environmental Results Program, which has been very successful. We are currently working with the Wisconsin Department of Natural Resources to implement an Environmental Results program based on the Massachusetts program and PrintSTEP. It was already piloted in Wisconsin and our project is focusing on making it permanent as is the situation in Massachusetts.

I will follow up with you in a week or so to see if you have any other questions about the report or what we are seeking to achieve in Wisconsin.

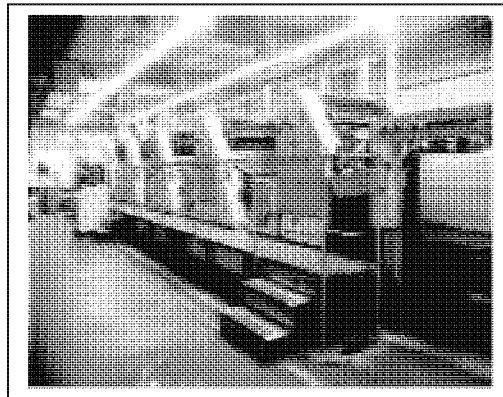
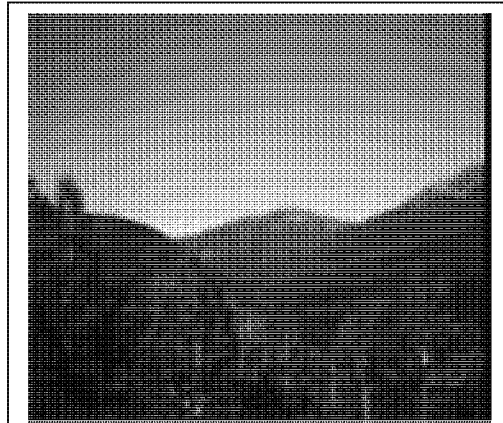
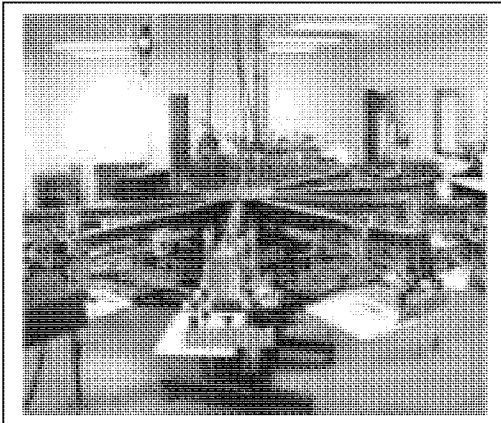
Sincerely,  
Gary Jones  
Assistant Vice President, EHS Affairs  
Printing Industries of America  
301 Brush Creek Road  
Warrendale, PA 15086  
P: 412-259-1794  
F: 412-741-2311  
E: [gjones@printing.org](mailto:gjones@printing.org)  
W: [www.printing.org](http://www.printing.org)

---

# Evaluation of the PrintSTEP Pilot Program

---

August 16, 2006



## Acknowledgements

This report was prepared by Abt Associates Inc., Cambridge, MA for the U.S. Environmental Protection Agency's Office of Compliance, led by Michael Stahl, under contract number GS-10F-0146; Order #3W-2942-NBLX. The EPA project manager was Maureen Lydon. The PrintSTEP project manager and the national stakeholder group provided extensive input, comments and ongoing support throughout the preparation of the report. The stakeholders who commented extensively included: Gary Jones of Printing Industries of America/Graphic Arts Technical Foundation; Marci Kinter of Specialty Graphic Imaging Association; Tara Olson and Rudy Cartier of New Hampshire Department of Environmental Services; and Bill Hernlund and Todd Crawford of Missouri Department of Natural Resources.

## Table of Contents

Introduction .....	1
Structure of the PrintSTEP Program.....	3
Evaluation Methodology .....	5
Evaluation Limitations .....	7
Implementation of the PrintSTEP Pilots	
Description of the Pilot Programs in Each State.....	8
PrintSTEP Participants.....	13
Motivations for Joining PrintSTEP .....	15
Impacts of PrintSTEP	
Impact on Environmental Protection and Practices .....	17
Impact on Efficiency of the PrintSTEP Process for Printers .....	32
Impact on Efficiency of the PrintSTEP Process for State Governments .....	41
Impact on Public Involvement .....	49
Benefits and Drawbacks of Participating in PrintSTEP	
Benefits .....	56
Drawbacks.....	57
Overall Satisfaction with PrintSTEP .....	58
Summary of Findings .....	59
Recommendations Based on the PrintSTEP Experience	
Recommendations Specific to PrintSTEP .....	63
General Recommendations for Future Pilot Programs .....	64
Appendices	
o Appendix A - Minnesota PrintSTEP Pilot Summary	
o Appendix B - Sample Survey Instrument: End-point Survey for Printers	
o Appendix C – Sample PrintSTEP Application Form	





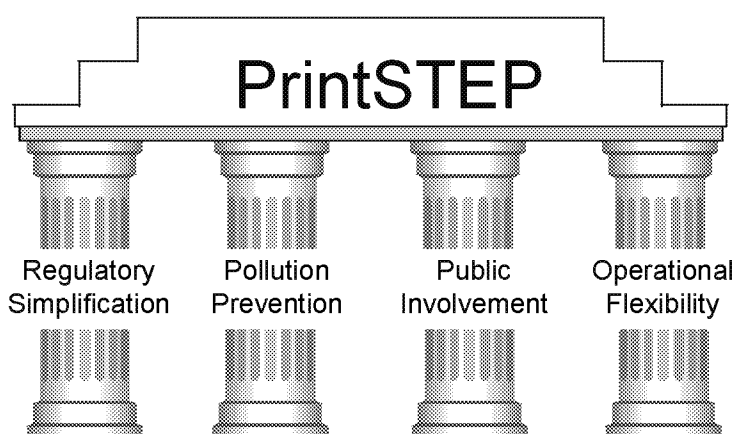
## • PRINTSTEP PILOT PROGRAM EVALUATION •

### Introduction

Printing, like any industry, has regulatory requirements that limit a facility's releases into the environment. Many in the printing industry, as well as representatives from state and federal government, environmental justice groups, and labor found these regulations could be complicated and confusing, especially for small businesses. The U.S. Environmental Protection Agency brought representatives from these organizations together to form a national team which developed the Printers' Simplified Total Environmental Partnership (PrintSTEP), a voluntary, multimedia alternative to the traditional administration of environmental regulation and permitting. PrintSTEP is intended to simplify these regulations and encourage awareness of environmental regulation in the printing industry. The National PrintSTEP team held numerous facilitated meetings with the goal of developing a commonsense approach to environmental protection in the printing industry. PrintSTEP was designed to meet the following **goals**:

- Enhance environmental protection.
- Increase use of pollution prevention practices.
- Improve efficiency of the regulatory process for printers.
- Improve efficiency of the regulatory process for state governments.
- Enhance public involvement.
- Provide motivation for stakeholders to participate in PrintSTEP.

The six goals of the PrintSTEP team were translated into the PrintSTEP pilot with features described as the four "pillars" of PrintSTEP:



- **Regulatory simplification.** PrintSTEP combines environmental regulatory programs impacting printing facilities into one modular, multimedia system. This system is intended to make it simpler for printers, regulators, and the public to understand printers'

environmental requirements, and easier for printers to comply with the requirements. Further, plain language tools were created to assist printers in determining their air emissions and regulatory requirements.

- **Pollution prevention.** Pollution prevention refers to changing industrial processes to generate less pollution in the first place, instead of treating and disposing of it after it is created. According to the Environmental Protection Agency's (EPA's) pollution prevention hierarchy, pollution prevention is a more efficient way of protecting the environment than after-the-fact treatment and disposal. Technical assistance was available through PrintSTEP to help printers prevent pollution. PrintSTEP was also structured so that the level of regulatory oversight would be proportional to the level of waste or emissions, thereby encouraging pollution prevention.
- **Public involvement.** PrintSTEP was designed to provide an opportunity for regulatory agencies, the printer, and the community to educate each other on environmental concerns and interests. PrintSTEP required that early and actual notice be provided to the surrounding community and "registered interested parties," and included opportunities for public meetings to address community concerns related to printers' environmental impacts.
- **Operational flexibility.** PrintSTEP was designed to streamline the permit process to give printers the ability to make certain changes to their processes without having to change their permit. This streamlining was accomplished by establishing "levels" for air emissions and hazardous waste generation. Each PrintSTEP air level, for example, corresponds to an allowable range of emissions. If a facility wanted to make a change to its operations that affected air emissions, it could do so without going through a regulatory approval process provided the change did not cause facility wide emissions to exceed the range of the facility's air level. Multimedia permitting was also intended to encourage holistic consideration of facility emissions.

To test the PrintSTEP concepts developed by the national PrintSTEP team, EPA entered into cooperative agreements with the Missouri Department of Natural Resources (MO DNR) and the New Hampshire Department of Environmental Services (NH DES). The MO DNR agreed to conduct a PrintSTEP pilot in the St. Louis area. The NH DES decided to pilot the PrintSTEP program statewide. Initially, Minnesota was also a PrintSTEP participant but subsequently withdrew from the program (see Appendix A).

The EPA commissioned an evaluation of the PrintSTEP pilot program, the results of which are documented in this report. As such, it presents qualitative and quantitative information collected from printers at the beginning and end of the pilot. It also presents information from the other participants, the state grantees and community stakeholders. For comparison purposes, information on printers participating in PrintSTEP as well as those not participating is presented. The information and analysis are presented in a summary and in the form of recommendations at the conclusion of the report.

## Structure of the PrintSTEP Program

The overarching goal of PrintSTEP was to help the printing industry achieve cleaner, cheaper, and smarter environmental protection through the creation of a simpler regulatory “framework.” PrintSTEP did not change the existing environmental regulations impacting the printing industry. Instead, it changed the process of implementing those requirements. PrintSTEP was intended to improve environmental performance, be more efficient, and make the regulatory process easier to understand for both the printer and the general public. Further, the specific PrintSTEP approach was designed to encourage all stakeholders involved with the printing industry to become involved and contribute positively. Each state grantee established a local Stakeholder Advisory Group with representatives from industry, government and community groups. The state PrintSTEP Coordinator worked with these groups to customize the program designed by the national PrintSTEP team to meet their specific state and/or local needs.

In PrintSTEP, a printer’s environmental requirements depended on the quantity of emissions or wastes a printing facility generated. PrintSTEP facilities with lower environmental releases had fewer requirements. Those printing facilities with the lowest releases would qualify for a PrintSTEP “Notification,” and those with greater releases received a PrintSTEP “Agreement.”

- A **Notification** required that printers document their environmental releases and send a completed PrintSTEP Application to the state environmental agency. These printers had to operate within the requirements described in the PrintSTEP Workbook, explained below, and maintain their Notification status, but in most cases no further contact with the state agency was required.
- An **Agreement**, intended for printers with greater environmental impact, also required that the printer document its environmental releases by sending a completed PrintSTEP Application to the state environmental agency. The printer then worked with the state and the community to develop a PrintSTEP Agreement. Printers in this category were required to notify the public of its Application and invite comments.

In addition, each pilot state created a Registry so that anyone interested in PrintSTEP could be put on a list to be notified of any activities. Lastly, all Applications, both Notifications and Agreements, were filed in an **Information Repository**, which was housed at local libraries, other public buildings, or on the Internet.

The national PrintSTEP team developed the following documents to assist with the PrintSTEP pilot implementation. Each pilot area customized these documents to reflect the way it implemented the pilot.

- **Guide to States.** This document outlined the goals, features, and anticipated benefits of the PrintSTEP alternative regulatory system. The document also included an implementation strategy to assist states in defining eligibility requirements, regulatory

thresholds, streamlining options, and geographic areas in which to implement pilot projects.

- **Printers' Plain Language Workbook.** This workbook outlined the entire PrintSTEP system and specifically identified what the printer had to do to meet environmental regulatory requirements. This multi-media workbook was provided to grantees as a template to be adapted to include state-specific needs. After state-specific modifications were made, the workbook was made available to printers and other interested parties in each state pilot location.
- **Community Handbook.** The community handbook was written for communities, containing plain-language information outlining the PrintSTEP public involvement provisions and explaining how the community, industry, and state regulators could work together to meet the goals of the PrintSTEP pilots.
- **Evaluation Strategy.** This document outlined how information would be collected and analyzed to determine whether PrintSTEP was beneficial for stakeholders and the environment.



## Evaluation Methodology

Because PrintSTEP is a multifaceted program, it has a variety of goals. Evaluating if these goals were met required a range of distinct data collection and analysis activities. This report documents the results of a comprehensive evaluation using information obtained from PrintSTEP participants as well as from non-participating printers. The information was collected using the techniques summarized in Table 1.

<b>Table 1: Mechanisms Used to Collect Data to Evaluate PrintSTEP Program</b>				
<b>Mechanism</b>	<b>State Agencies</b>	<b>Printers</b>	<b>Public</b>	<b>Information Collected</b>
Telephone Surveys: <i>Baseline, midpoint and endpoint</i>		X		Participating printers' pre-PrintSTEP understanding of regulations, motivation to join PrintSTEP, and experiences with PrintSTEP. (qualitative)
Applications: <i>Baseline and endpoint</i>		X		Participating printers' air, hazardous waste, water, storm water, and pollution prevention data. (quantitative and qualitative)
State Databases: <i>Baseline and endpoint</i>		X		Nonparticipating printers' air and hazardous waste data. (quantitative)
Interviews: <i>Baseline and midpoint</i>	X			With state personnel — Agency function and organization pre- and post-PrintSTEP and implementation experiences. (qualitative)
Questionnaires: <i>Endpoint</i>			X	With stakeholder advisory group participants — Public interest in PrintSTEP. (qualitative)

### ***Printers: Telephone Survey and PrintSTEP Application Forms***

It is critical to the evaluation to understand how printers view the PrintSTEP program, how their environmental performance changed, and what they see as the drawbacks to program participation. Printers were interviewed by telephone three times over the course of the pilot: at the start (baseline) of the pilot, midway through the pilot, and again at the end of the pilot. The Baseline survey established a starting point against which subsequent measures were compared. The midpoint survey collected information on the printers' opinions about the initial application process and initial changes they made at their facility. This information is likely to be more accurate if collected at an interim point than it would be if it were collected at the end of the pilot, when recall wouldn't be as strong and greater staff turnover could occur. Instead, the endpoint survey focused primarily on overall satisfaction with the program and assessing the burden of the pilot on participants; areas where any impacts are not likely to be as evident earlier in the program. The national PrintSTEP team provided significant input into the survey instruments. A sample survey instrument, the end-point survey for printers, is provided in Appendix B.

In addition to the telephone surveys, the PrintSTEP Application provided data on air emissions, hazardous waste generation, stormwater and wastewater status, as well as background information characterizing the facility by type of printing operations and number of employees. Participating printers completed the Application upon joining PrintSTEP, and provided updated information at the end of the pilot. A sample application form, used in New Hampshire, is provided in Appendix C.

Initially the pilot evaluation design called for a “control group” of printers that did not participate in the pilot. The purpose of a control group was to account for confounding factors (e.g., changes in the economy or in technologies) that might undermine the ability to attribute observed changes to the PrintSTEP pilot. However, as the PrintSTEP program was implemented, stakeholders determined that obtaining the participation of printers who were not engaged in PrintSTEP was not realistic. Based on input from printers and the national PrintSTEP team<sup>[0]</sup>, it was clear that printers who did not volunteer to be a part of PrintSTEP were unlikely to voluntarily complete the surveys necessary for evaluation purposes. Therefore, to account for changes occurring during the pilot that may be sector-wide, rather than attributable to PrintSTEP, the evaluation took into account data on non-PrintSTEP printers from existing state databases; data on both air emissions and hazardous waste generation were available for the non-participants.

#### ***State Agency: In-person and Telephone Interviews***

With regard to state environmental agencies, the critical outcome to be evaluated was efficiency: was the PrintSTEP approach more or less efficient than the traditional approach? In-person interviews were conducted with state government personnel at the baseline, and telephone interviews were conducted toward the end of the pilot. Questions about the organization of media programs and multi-media office coordination were explored, as well as staff's opinions on the costs and benefits of PrintSTEP. The PrintSTEP Coordinator for each pilot was also asked to collect information on the length of time it took to process permits under the traditional system compared to the time to implement the PrintSTEP pilot.

#### ***Community: Questionnaires***

To evaluate the effectiveness of the public involvement component of PrintSTEP, a survey of participating community members was originally planned as part of the PrintSTEP evaluation. However, because no individual community members commented on any PrintSTEP Applications or placed their names in the PrintSTEP Registries, this survey could not be administered. Instead, the PrintSTEP Coordinators solicited comments from their Stakeholder Advisory Groups on the community involvement aspect of PrintSTEP. This approach was used to gather as much information as possible on why there was such limited interest from the public.

## Evaluation Limitations

In reviewing the findings presented in this report, it is important to keep the limitations of this study in mind:

- For each round of telephone surveys, multiple attempts were made to contact every participating printer, however, not all participants responded. The decreased response rate at the endpoint could influence the findings presented in this report. If there are significant differences between the respondent population and non-respondents, the survey results may not accurately reflect the opinions and activities of all participants.

Number of PrintSTEP Participants and Survey Responses		
	St. Louis, Missouri	New Hampshire
Initial Participants	11	47
Endpoint Participants	9	45
Endpoint Annual Reports Received	8	40
Respondents to Baseline Survey	11	47
Respondents to Midpoint Survey	8	43
Respondents to Endpoint Survey	7	31
<i>Sources: Missouri and New Hampshire PrintSTEP Applications, Annual Reports, PrintSTEP pilot baseline, midpoint, and endpoint telephone survey of participating printers.</i>		

- The findings of the evaluation are only as accurate as the information provided by respondents. In some cases, interviewees may have misinterpreted questions or inadvertently reported inaccurate information. In addition, some respondents may not have been fully aware of which aspects of the pilot were attributable to PrintSTEP and which were related to existing requirements that they had not known about. For example, New Hampshire's air toxics requirements were in effect well before PrintSTEP, however many printers were not aware of the requirements until they joined PrintSTEP. This led some printers to associate the burden of calculating their air toxics with PrintSTEP when, in fact, they were subject to this requirement regardless of PrintSTEP.
- Overall, given the number of participants in PrintSTEP versus the number of printers nationwide, it's unrealistic to apply the results presented in this study to the printing industry as a whole.
- The influence of confounding factors on the findings was minimized through the use of state-level data for non-PrintSTEP printers. Comparing PrintSTEP changes over time to the changes for these non-PrintSTEP printers was intended to account for industry-wide trends that are not unique to pilot participants, such as changes in economic conditions or printing technologies. While the data used accomplished this to some degree, the only data available were from state databases for air emissions and hazardous waste. The states maintain this type of data only for facilities meeting certain thresholds. Thus, smaller facilities are typically not included. Printers are typically small facilities, and so the comparison was likely not of equals. However, the non-PrintSTEP printer data were examined from the perspective of a percentage change over time to mitigate the impact of confounding factors.



## Implementation of the PrintSTEP Pilots

### *Description of the Pilot Programs in Each State*

Initially, a total of 61 printers participated in PrintSTEP in two states. In Missouri, where the program was implemented in the St. Louis region, 11 printers initially joined.<sup>1</sup> If a participating printer had any existing permits, such as would be required if their air emissions exceeded state or federal thresholds, these permits were referenced (but not replaced) in the PrintSTEP Agreements. In New Hampshire, where the program was implemented statewide, 50 printers participated, and PrintSTEP Agreements replaced any new permits that may have been required. Each state chose their approach based on the legal advice received within their state agency. In both states, participation was voluntary and both pilot areas included participating and nonparticipating printers.<sup>2</sup> At the end of the pilot, data from nine participants from Missouri and 40 from New Hampshire<sup>3</sup> were included in the evaluation.

The state environmental agencies for both pilots received an EPA cooperative agreement to administer the pilot project. Each state agency used a portion of their grant funding to hire a PrintSTEP Coordinator whose role was to administer the program, refine the PrintSTEP template developed nationally to meet state/local needs, recruit printers, and provide on-going technical assistance to participants.

The **Missouri** PrintSTEP pilot was formally launched in 2001, and Notifications and Agreements were finalized early in 2003. PrintSTEP was administered by the Missouri Department of Natural Resources (DNR), Division of Environmental Quality. In Missouri, the PrintSTEP pilot was implemented in the St. Louis area, overseen by the Air and Land Protection Division with day-to-day activities directed by the PrintSTEP Coordinator. The Coordinator worked closely with the Missouri Air Conservation Commission and the Metropolitan St. Louis Sewer District during the pilot development, as described below.

The **New Hampshire** PrintSTEP pilot was implemented statewide by the New Hampshire Department of Environmental Services (NHDES) Small Business Technical Assistance Program (SBTAP). The program was launched in 2001, with Applications received in 2002 and Notifications and Agreements finalized in 2003. SBTAP's Small Business Ombudsman oversaw the pilot, with day-to-day activities directed by the state PrintSTEP Coordinator. The Coordinator worked with NHDES air, water, and hazardous waste staff as needed to implement the pilot. The media offices were involved with up-front development of the

---

<sup>1</sup> Two of these printers dropped out early in the pilot; one closed owing to a fire and the other declared bankruptcy.

<sup>2</sup> New Hampshire has a total of approximately 300 printers statewide.

<sup>3</sup> One printer in Missouri failed to submit a report because the company went bankrupt. Five of the New Hampshire printers failed to submit their endpoint report, and two formally dropped out of the program.

program, but were not involved in the Application process or in assisting printers throughout the pilot. The local trade association, Printing Industries of New England (PINE), was also substantively involved. PINE participated in the training workshops, as well as assisting printers with the application process. The Small Business Development Center (SBDC), a non-profit organization that provides free technical assistance to businesses in NH, also participated in the workshops and assisted printers in applying to the program.

NH DES intends to continue the PrintSTEP program within the state beyond the life of the pilot and the EPA cooperative agreement.

### ***Streamlining and Interagency Cooperation***

In **Missouri**, interagency cooperation resulted in two actions that helped streamline regulations for printers in St. Louis:

- **Permit variance from the Missouri Air Conservation Commission.** The PrintSTEP program was designed to provide flexibility for printers when they needed to add new equipment that would increase air emissions. In the pilot, emissions could be increased within the printer's PrintSTEP air level with a simple notification to Missouri DNR and no further requirements. Modification of the Agreement, with associated public participation requirements, was only necessary when the facility's air level was going to be exceeded. Because this approach was at odds with state air pollution rules, the Missouri Air Conservation Commission agreed to grant a variance from the air pollution construction and operating permit rules. This variance was reinstated each year of the program.
- **Memorandums of understanding (MOUs).** MOUs were agreed to and signed by the Missouri DNR with the following local regulatory agencies:
  - City of St. Louis, Division of Air Pollution Control.
  - St. Louis County Health Department.
  - Metropolitan St. Louis Sewer District.

Development of MOUs was necessary because the participating printers operate within the jurisdictional boundaries of these agencies. The MOUs allowed Missouri DNR to conduct PrintSTEP within the local regulatory agency's jurisdiction in a cooperative and coordinated manner. No changes were made to the local fee and reporting structures. The local agencies were also instrumental in the development of the state PrintSTEP reporting methods themselves.

Under a supplemental cooperative agreement with EPA, the MO DNR developed a multi-media annual reporting form. Because this form was not completed as part of the original PrintSTEP grant or in time for implementation under this pilot, it is not evaluated in this report, but is available from the MO DNR.

In **New Hampshire**, formal interagency cooperation was not needed in the same way as in Missouri. Every media included in the New Hampshire PrintSTEP program is regulated at

the state level, with the exception of storm water (federal) and waste water (local). The New Hampshire PrintSTEP program had the flexibility to combine all the rules into one program.

### ***Outreach by the States***

In **Missouri**, the PrintSTEP Coordinator visited each participating facility at least twice, the first time to introduce the printer to the program and a second time to help the printer complete the Application form. During these visits the Coordinator suggested changes to improve environmental performance and compliance, as described later in the report. Throughout the pilot, the Coordinator assisted the printers with process changes, annual reports, and other issues.

Missouri's outreach activities to inform printers and the public about PrintSTEP included the following:

- **Formation of a stakeholder advisory group.** A St. Louis PrintSTEP stakeholder advisory group (SAG) was established in December 1999. The group worked with Missouri DNR to determine how to implement the local PrintSTEP program. Representatives from the Missouri DNR, the Rainbow Chamber of Commerce, the Wesley House Association, the American Lung Association of Eastern Missouri, Commercial Lithographic Company, Conservation Federation of Missouri, Fleming Promotional Graphics, Printing Industries of St. Louis, and the U.S. Environmental Protection Agency Region 7 office took part. The SAG met 20 times during the project and was substantively involved throughout the program.
- **Incorporation of input from the SAG.** The SAG customized the PrintSTEP program design and worked together to complete the background and outreach materials for the pilot.
- **Development of a community handbook and brochure.** The SAG published the St. Louis PrintSTEP Community Handbook and brochure in December 2001. The handbook was intended to help community members participate by explaining the PrintSTEP process and the environmental requirements faced by printers.
- **Development of press releases.** Missouri PrintSTEP issued two press releases in December 2001.
- **Publication of newspaper articles.** Two local newspaper articles were published to inform the general public about the PrintSTEP program.
- **Publication of articles in newsletters.** Three industry organization newsletters published articles about the Missouri PrintSTEP program to inform printers about the pilot.
- **Placement of a radio announcement.** Missouri PrintSTEP placed one radio announcement.
- **Establishment of public information repositories.** Public information repositories were established and maintained detailed reference information about PrintSTEP and its participating printers. The repositories were located at six St. Louis county libraries and two local Missouri DNR offices near the PrintSTEP printers to improve public accessibility.

- **Establishment of a PrintSTEP website.** Missouri DNR developed a PrintSTEP website (<http://www.dnr.mo.gov/printstep/index.html>) that maintained detailed information about PrintSTEP and participating Missouri printers.
- **Contact with local officials.** Letters were sent to local elected officials to inform them of the printers participating in their area and to highlight the public involvement component of the program.
- **Hosting of introductory breakfast workshop.** A workshop was held to introduce the PrintSTEP program to local printers. The workshop was led by the PrintSTEP Coordinator together with printing trade association representatives.
- **Training of State and Federal Regulatory Personnel** To assist the state and federal regulatory personnel in understanding both the industry and applicability of the PrintSTEP program, national trade association representatives conducted informational training on the printing industry. This helped to set a baseline of knowledge for all regulatory personnel involved in the development of the program.

Some participating printers conducted additional public outreach, as described in the *Impact on Public Involvement* section of this report.

In **New Hampshire**, the PrintSTEP Coordinator and other state agency staff involved in implementing PrintSTEP conducted extensive outreach. NH DES strongly encouraged printers to join and offered to work with printers to ensure that they were in compliance. Every eligible printer in the state was called encouraging them to attend informational workshops. New Hampshire had several people working on recruiting printers and offering help with applications, including on-site assistance. Overall, an estimated 35 out of 47 printers applying to the program received technical assistance on their Application. This assistance fostered a relationship between the printers and the state agency so that printers were comfortable contacting the agency to ask questions throughout the length of the pilot. For example, following the announcement of new, statewide regulatory changes regarding hazardous waste requirements, the PrintSTEP Coordinator sent each participating printer a letter. She received many follow-up phone calls and was able to assist those printers directly.

NH's outreach activities to inform printers and the public about PrintSTEP included the following:

- **Formation of a stakeholder advisory group.** The New Hampshire PrintSTEP stakeholder advisory group, called the PrintSTEP Stakeholder Group (PSG), was established in 2000. Representatives of New Hampshire DES, the EPA, environmental justice groups, printing organizations, trade associations, the Audubon Society, and legislative affiliations were invited to participate as stakeholders. The PSG was invited to provide input and guidance to the New Hampshire DES on how to implement the PrintSTEP program. More than 10 stakeholder meetings were held over the duration of the program. However, the PrintSTEP Coordinator and other government stakeholders judged that while the PSG was initially strong, after the first few meetings, members

representing community interests no longer participated. The Coordinator interpreted this lack of participation as possibly a result of sporadic communication from the pilot staff to PSG members, as well as limited interest.

- **Hosting workshops for printers.** Twelve workshops were held for printers at different times and locations throughout the state to introduce them to PrintSTEP and to assist with the application process. Several New Hampshire DES staff and PSG members were extensively involved in these workshops, including staff from the SBDC, PINE, and the SBTAP.
- **Development of a community handbook.** A community handbook was developed in January 2001 and made available to those interested. The handbook was intended to help communities participate in the pilot by explaining the PrintSTEP process and the environmental requirements faced by printers.
- **Publication of a press release.** The general public was introduced to the PrintSTEP program in a press release distributed to various newspapers around the state at the initiation of the program.
- **Publication of articles in a newsletter.** The PrintSTEP staff wrote articles for a quarterly newsletter published by the state's small business assistance program and distributed to small businesses in New Hampshire.
- **Publication of a PrintSTEP brochure.** A PrintSTEP brochure was developed and distributed to all identified printers in New Hampshire and to other interested entities.
- **Establishment of public information repositories.** A public information repository was established at the New Hampshire DES offices in Concord, New Hampshire. The repository maintained information about PrintSTEP and its participating printers. For printers with Agreement status, information repositories were also established in the town offices of the towns where the participating printers were located.
- **Establishment of a PrintSTEP website.** To improve information access beyond the information repositories, the New Hampshire DES developed a PrintSTEP website (<http://des.nh.gov/SBTAP/printstep/>). The website maintained references and information about PrintSTEP and its participating printers, including each printer's application information.
- **Publication of legal notices in local newspapers.** To inform members of the public that a printer in their area submitted a PrintSTEP Application for an Agreement, New Hampshire DES published legal notices in local newspapers. A second legal notice was also published when the Agreement was drafted.
- **Contact with local officials.** Legal notices were sent to local elected officials to inform them of the printers with Agreement status participating in their area.

Some participating printers conducted additional public outreach, as described in the *Impact on Public Involvement* section of this report.

## **PrintSTEP Participants**

In St. Louis, **Missouri**, a total of 11 printers joined the PrintSTEP pilot: four printers signed PrintSTEP Agreements with Missouri DNR, and seven printers with lower release amounts qualified for PrintSTEP Notifications. Of the printers with Agreements, two qualified for an Agreement based on air emissions of volatile organic compounds (VOCs) and two qualified based on their hazardous waste generation. By the end of the pilot, one PrintSTEP printer had merged with another PrintSTEP printer after a fire closed its business; one went bankrupt. The MO pilot ended with nine participating printers, but endpoint information for the evaluation was received from eight printers as another participant went out of business.

In **New Hampshire**, 50 printers joined the PrintSTEP pilot; however, three of these printers joined after the initial application period and therefore, were not included in the evaluation. The majority of the participants are small businesses with lesser emissions and discharges; as a result, they maintained Notification status. Three New Hampshire printers signed PrintSTEP Agreements, primarily due to having air emissions above threshold levels. Two printers, both with Notifications, asked to be taken out of the program and another five did not submit endpoint information. As a result, data on 40 NH printers are included in the evaluation.

<b>Table 2: PrintSTEP Printers</b>						
<b>State</b>	<b>Baseline Data Received</b>			<b>Endpoint Data Received</b>		
	<b>Total</b>	<b>Notifications</b>	<b>Agreements</b>	<b>Total</b>	<b>Notifications</b>	<b>Agreements</b>
<b>Missouri</b>	11	7	4	9	6	3
<b>New Hampshire</b>	47	44	3	40	37	3

Participating printers were required to complete a PrintSTEP Application when they joined the program. The Application requested information describing their facility's characteristics, environmental releases, and pollution prevention activities. Each printer was again asked to update the information on their original Application at the end of the pilot. Information for the years 2001 or 2002, and 2004 was collected. Variation in the baseline date occurred depending on exactly when a printer joined the program.

As shown in Table 3, endpoint information was received from eight printers in Missouri and 40 printers in New Hampshire. The table also indicates the total number of employees at the participating facilities and the range of employees at the printing facilities.

Table 3: PrintSTEP Printers						
State	Number of Facilities Participating*		Number of Employees at Baseline		Number of Employees at Endpoint	
	Baseline	Endpoint	Total	Range	Total**	Range
Missouri	11	8	1,023	12–320	706	14–200
New Hampshire	47	40	1,157	1–190	1,105	1–190
<b>TOTAL</b>	<b>56</b>	<b>48</b>	<b>1,987</b>		<b>1,811</b>	
* This number reflects the number of printers that submitted data and are therefore included in this evaluation.						
** One printer from New Hampshire did not provide employee data in the endpoint.						
Source: Missouri and New Hampshire PrintSTEP Applications and Annual Reports.						

Table 4 presents PrintSTEP printers by their print process. Note that facilities may have more than one printing process.

Table 4: Type of Printing Operations						
Printing Process	Number of Facilities					
	St. Louis, Missouri			New Hampshire		
	Baseline	Endpoint	Percentage Change (%)	Baseline	Endpoint	Percentage Change (%)
Sheetfed Lithography	6	4	—	27	29	7
Nonheatset Web Lithography	1	2	100	3	4	33
Heatset Web Lithography	1	0	—	3	3	—
Flexography	1	1	—	3	3	—
Screen Printing	1	1	—	6	6	—
Gravure	0	0	—	0	0	—
Digital	3	4	100	5	7	40
Prepress	8	6	—	n/a	n/a	n/a
Source: Missouri and New Hampshire PrintSTEP Applications.						

As shown in Table 4 and described elsewhere in this report, some PrintSTEP printers exhibited growth during the pilot period by adding presses and expanding operations. It's also notable that PrintSTEP printers mirrored the sector-wide trend seen over these years of adding digital capability while maintaining operations of their other processes.

Table 5 illustrates how the PrintSTEP printers compared with the general population of printers. As seen in the table, the distribution of printing types for PrintSTEP printers based on their primary printing process at the pilot endpoint is fairly representative of state and national distributions, with a slightly greater proportion of flexographic printers in the PrintSTEP population. This difference may reflect double counting in those cases where a printer had multiple printing processes on site.

Table 5: Type of Printing Operations (at endpoint)								
Printing Process	Percentage of Facilities				Average Number of Employees per Printer			
	For PrintSTEP Printers		By State		For PrintSTEP Printers		By State	
	MO	NH	MO	NH	MO	NH	MO	NH
Lithography	66%	90%	78%	77%	54	28	18	17
Flexography	13%	8%	5%	2%	140	118	30	95
Screen Printing	13%	15%	15%	21%	97	10	14	16
Source: Missouri and New Hampshire PrintSTEP Applications; U.S. Census Bureau, County Business Patterns, 2003; available at: <a href="http://www.census.gov/epcd/cbp/view/cbpview.html">http://www.census.gov/epcd/cbp/view/cbpview.html</a>								

### **Motivations for Joining PrintSTEP**

The developers of PrintSTEP felt it was important to understand the participating printers' motivations for joining the pilot. This information helps to determine whether PrintSTEP meets the expectations of its participants and also provides valuable input in the development of future voluntary programs. The information presented in this section is based on the participants' responses to the baseline telephone survey.

Printers expressed a variety of motivations for joining PrintSTEP; the most frequent response was that they joined to improve their environmental compliance and better understand their environmental requirements. Of the 58 printers responding, 67% (39 of 58 printers) stated compliance and better understanding of the requirements as their motivation for joining. Specifically, printers said:

- "We're a small business, so I thought it would be a good way to learn the regulations."
- "Primarily, I wanted to make sure we were in compliance."
- "I knew there were regulations, and I wanted to make sure we were in compliance."

The next most frequent response was saving time and effort; however, this reason was a distant second with 14% (8 of 58) of printers giving this response. Specifically, printers commented:

- "I like the simplified reporting with one-stop shopping for information."
- "[I want to] minimize time and effort for reporting."

Table 6 summarizes all responses.



Table 6: Reasons Why Printers Chose to Participate in PrintSTEP	
Reason	Percentage Responding
Improve compliance/better understand environmental requirements/improve environmental performance	67% (39/58)
Minimize time and effort for environmental requirements/simplified reporting/single cross-media contact	14% (8/58)
Worried about being targeted for inspections if their facility did not join	9% (5/58)
Community responsibility of public image	5% (3/58)
Encouraged by state or trade association	5% (3/58)



## Impacts of PrintSTEP

### *Impact on Environmental Protection and Practices*

This section presents information on changes in environmental practices and results from PrintSTEP. Specifically, changes in environmental outcomes, pollution prevention, and regulatory compliance are presented. In addition to overall environmental improvement, the main pillar of PrintSTEP addressed by this information is:

- **Pollution Prevention.** PrintSTEP was designed to encourage pollution prevention by providing technical assistance and showing that the level of regulatory oversight is proportional to the level of waste or emissions.

Quantitative information was obtained to assess changes in environmental releases, discharges, and practices for PrintSTEP printers as well as for non-PrintSTEP printers. The years examined were 2001 and 2004.

For PrintSTEP printers, the information used in this evaluation was reported on the PrintSTEP Application, and then again in a final report in the same format as the original Application. The following information was obtained from PrintSTEP printers to evaluate environmental outcomes:

- Waste water management method.
- Storm water exposure status.
- Hazardous waste generation and Resource Conservation and Recovery Act (RCRA) generator status.
- PrintSTEP air level.
- VOC and regulated toxic air pollutant (RTAP) emissions.<sup>4</sup>
- Public participation activities.
- Pollution prevention activities.
- A production activity indicator (PAI) chosen by the facility to normalize data to account for changes in production.

To account for changes occurring during the pilot that may be sectorwide rather than attributable to PrintSTEP, data were examined using available information on non-PrintSTEP printers from existing state databases. The following data were obtained on non-PrintSTEP printers:

- Quantity of hazardous waste manifested.<sup>5</sup>
- VOC or RTAP emissions.

<sup>4</sup> In Missouri, VOC emissions were reported. In New Hampshire, RTAP emissions were reported. RTAPs include VOCs, hazardous air pollutants (HAPs), and other toxic air pollutants.

<sup>5</sup> Note that PrintSTEP printers reported waste generated, while state databases capture waste that is manifested. This difference does not affect the analysis, as only relative change is examined and quantitative differences between the two populations are not directly compared.

For these two parameters, data were available for only those printers that were RCRA large quantity generators (LQGs) or that had an air permit. Nonetheless, this information provides additional insight into changes observed in participants' environmental characteristics and helps to determine whether changes were a result of the pilot or of factors influencing the industry as a whole. Waste water is managed at the local level, so data on this release and others were not available. In place of the PAI used for PrintSTEP printers, state-specific normalizing factors were used to account for changes in industry activity level in the non-PrintSTEP population.<sup>6</sup>

### ***Air Emissions***

In most types of printing processes, air emissions are printers' primary environmental concern. Typically, printing operations may release VOCs, a contributor to ground-level ozone, and hazardous air pollutants (HAPs), also known as air toxics.

VOCs used at printing facilities are typically found in inks, coatings, adhesives, cleaning solutions, and fountain solution/fountain solution additives. Depending on the amount of these chemicals used, a printing facility participating in PrintSTEP was placed into different "levels" for air emissions, which were used to determine the facility's environmental requirements. PrintSTEP 's five air levels ranged from Level 1, representing the lowest air emissions, to Level 5, representing the highest. Tables 7 and 8 present each air level and its corresponding volume of VOC material for Missouri and New Hampshire, respectively. Facilities also estimated their HAPs as another factor in determining their air level.

The national PrintSTEP team provided a tool to simplify these VOC and HAP calculations for printers by developing "material use worksheets." These worksheets allowed the printers to calculate their quantities of VOC-containing materials used in one year. Air levels are based on this quantity of material actually used, rather than on having to calculate emissions. Given that quantities of materials used are usually readily available through purchasing or inventory records, these worksheets set out to simplify the VOC and HAP estimation process for printers. The following tables also illustrate how two different states implemented the PrintSTEP program to coordinate with specific state requirements.

---

<sup>6</sup> The normalizing factor is based on the U.S. Census Bureau 2000–2003 change in number of employees for each state's commercial lithographic, gravure, flexographic, and screen printing industry. Printing support services are not included.

<b>Table 7: Material Use Air Level Table for VOCs — Missouri</b>			
Air Level	Sheetfed Offset or Nonheatset Web Lithography, or Screen Printing	Heatset Web Offset Lithography, or Flexography or Rotogravure with Solvent-Based Inks	Flexography with Water-Based Inks
Level 1	Less than 2,855 gals	Less than 20,000 lbs	Less than 80,000 lbs
Level 2	2,855–7,135 gals	20,000–50,000 lbs	80,000–200,000 lbs
Level 3	7,135–14,275 gals	50,000–100,000 lbs	200,000–400,000 lbs
Level 4	14,275–28,550 gals	100,000–200,000 lbs	400,000–800,000 lbs
Level 5	more than 28,550 gals	more than 200,000 lbs	more than 800,000 lbs
<i>Source: Missouri Plain Language Workbook.</i>			

<b>Table 8: Material Use Air Level Table for VOCs — New Hampshire</b>			
Air Level	Sheetfed Offset or Nonheatset Web Lithography, or Screen Printing	Heatset Web Offset Lithography, or Flexography or Rotogravure with Solvent-Based Inks	Flexography with Water-Based Inks
Level 1	Less than 1,425 gals	Less than 10,000 lbs	Less than 40,000 lbs
Level 2	1,425–3,560 gals	10,000–25,000 lbs	40,000–100,000 lbs
Level 3	3,560–7,125 gals	25,000–50,000 lbs	100,000–200,000 lbs
Level 4	7,125–14,250 gals	50,000–100,000 lbs	200,000–400,000 lbs
Level 5	more than 14,250 gals	more than 100,000 lbs	more than 400,000 lbs
<i>Source: New Hampshire Plain Language Workbook.</i>			

In Missouri, some facilities determined their PrintSTEP air level range using the material use worksheets, while other printers used the state's Emissions Inventory Questionnaire (EIQ). The EIQ requires facilities exceeding the reporting threshold of 876 pounds of VOCs, or 20 – 200 pounds of HAPs (depending on the "category" of the HAP) to submit data on their actual VOC or HAP emissions. This measurement method differs significantly from the material use worksheets, but several facilities had already calculated their VOC emissions to meet their EIQ requirements, so the EIQ was the easiest method for them.

In New Hampshire, each facility determined its VOC and HAP air level based on material use, as well as its air level based on emissions of RTAPs. An evaluation of RTAP emissions is required by the state's Air Toxics Rule. A permit is required for facilities that exceed a VOC, HAP or RTAP threshold. None of the PrintSTEP printers exceeded the HAP or RTAP threshold. Three printers exceeded the VOC threshold and therefore required an air permit which was incorporated into the printer's PrintSTEP Agreement.

Table 9 presents the number of PrintSTEP printers at each air level at the beginning and end of the PrintSTEP pilot. The purpose of collecting and presenting air level information is to determine if printers changed their air emissions through participation in PrintSTEP. As can be seen in the table, most printers have low emissions. They fall within PrintSTEP Level 1 and remained there over the course of the pilot. One printer in Missouri moved up to Level 2 because they changed their product mix from black and white on newsprint to multicolor advertising pieces requiring more ink to be consumed.

<b>Table 9: PrintSTEP Printers Air Level</b>				
Air Level	Missouri (VOCs) Number of Printers		New Hampshire (VOCs) Number of Printers	
	Baseline	Endpoint	Baseline	Endpoint
Level 1	9	5	37	30
Level 2	2	3	0	0
Level 3	0	0	0	0
Level 4	0	0	3	3
Level 5	0	0	0	0
<i>Source: Missouri and New Hampshire PrintSTEP Applications.</i>				

Table 10 shows the number of PrintSTEP printers for which air emissions increased or decreased between the baseline and endpoint of the pilot. Air emission data differed in the two pilot programs owing to differences in state-specific air requirements. On the New Hampshire PrintSTEP Application, printers recorded their VOC emissions by level (VOC Level 1, 2, 3, 4 or 5) and their RTAP emissions by level (RTAP Level 1, 2) as well as actual RTAP emissions. For the Missouri Application, printers recorded their actual VOC emissions and VOC level. This distinction does not affect the results presented in this report because printers were compared only with other printers within their state. As shown in the table, six printers in Missouri increased air emissions over the life of the pilot, while one decreased. In New Hampshire, a majority, or 58% of printers (22 of 38) decreased emissions. Across both states, 51% of PrintSTEP printers (23 out of 45) demonstrated a reduction in air emissions during the pilot. The average percentage change shown in the last column of the table is based on average quantities released for each printer. The average percentage change shows an increase although decreases did occur for more than half of the printers. This apparent discrepancy is because the magnitude of emission increases exceeded decreases when the whole group is examined.

Table 10: PrintSTEP Printers Change in VOC/RTAP Emissions					
State	Number of Facilities*	Decreased	Increased	Unchanged	Average Percentage Change
Missouri	7	14% (1/7)	86% (6/7)	0	+27%
New Hampshire	38	58% (22/38)	37% (14/38)	5% (2/38)	+42%
<b>TOTAL</b>	<b>45</b>	<b>51% (23/45)</b>	<b>44% (20/45)</b>	<b>4% (2/45)</b>	
Note: Change in emissions was normalized based on production activity indicators provided by the facilities.					
*The number of facilities that submitted endpoint data on air emissions and had air emissions.					
Source: Missouri and New Hampshire PrintSTEP Applications.					

For comparison purposes, Table 11 illustrates non-PrintSTEP printers' VOC emissions. These data reflect printers with air permits, as such printers are the only facilities required to report VOCs to the state agency. Data were obtained for 13 printers in Missouri and three printers in New Hampshire. Results show a majority of printers (10 out of 13 printers, or 77%) increased VOC emissions in Missouri, while in New Hampshire all three printers reduced VOC emissions. Overall, 63% of non-PrintSTEP printers (10 out of 16) showed an increase in VOC air emissions during the pilot.

Table 11: Non-PrintSTEP Printers Change in VOC Emissions			
State	Decreased	Increased	Unchanged
Missouri	23% (3/13)	77% (10/13)	0
New Hampshire	100% (3/3)	0% (0/3)	0
<b>TOTAL</b>	<b>38% (6/16)</b>	<b>63% (10/16)</b>	<b>0</b>
Note: Gross amount of emissions was normalized based on the change in the number of employees from 2000 to 2003 for each state's commercial lithographic, gravure, flexographic, and screen printing industry.			
Sources: Missouri's Department of Natural Resources and New Hampshire's Department of Environmental Services, 2001 and 2004 data; and (U.S. Census Bureau, County Business Patterns, 2003; available at: <a href="http://www.census.gov/epcd/cbp/view/cbpview.html">http://www.census.gov/epcd/cbp/view/cbpview.html</a> )			

From these limited data it can be observed that the pilot group had better performance than the non-PrintSTEP group, with 51% of facilities decreasing air emissions as compared with 38% in the non-PrintSTEP group. Note, however, that sample size for non-PrintSTEP printers is small compared with the universe of printers in each state.

Looking at the states individually, in New Hampshire, a majority of both PrintSTEP and non-PrintSTEP printers showed decreases in emissions during the pilot (58% and 100%, respectively). In Missouri, a minority of both PrintSTEP and non-PrintSTEP printers showed decreases in emissions (14% and 23%, respectively). It is notable that Missouri has a very small sample of printers from which to collect data. In both states, measurement in the PrintSTEP group was likely to be more accurate than for the non-PrintSTEP group owing to direct technical assistance from the PrintSTEP Coordinators. It may also be generalized that these printers tended to be more robust economically, as they are a self-selected group

interested in participating in an innovative environmental program. In Missouri, increases in VOCs can be attributed to changes at specific printing facilities:

- One printer changed to a higher VOC coating for performance reasons (i.e., so that signs now last longer).
- Another printer changed its market, eliminating gluing and expanded printing. This change increased its use of isopropyl alcohol and its emissions of VOCs.
- Two printers added presses. One of these printers also eliminated the use of all VOC-free products because they were expensive and the printer found the products didn't perform well for its printing applications.
- Another printer added four new production and printing units over the three-year period.

### ***Hazardous Waste***

Typical printer wastes that may be considered hazardous include some waste inks, waste solvent, spent fixer, processed developer, and solid wastes such as soiled absorbent materials. All hazardous waste must be managed following RCRA requirements to prevent its release into the environment.

Table 12 presents the number of PrintSTEP printers for which hazardous waste generation increased or decreased between the baseline and endpoint of PrintSTEP. As shown in the table, only one of the four Missouri printers generating hazardous waste decreased waste generation during the pilot. In New Hampshire, a majority, or 71% PrintSTEP printers (20) generating hazardous waste decreased their generation. Across both states, 66% of PrintSTEP printers (21 out of 32) decreased waste during the pilot. In some cases, the increases in waste reported can be attributed to improved compliance rates, where facilities that once were improperly disposing of hazardous waste began disposing of it properly and tracking it correctly as a hazardous waste. For specific printers in Missouri, increases in hazardous waste were seen during the pilot, mostly reflecting improved waste management and measurement practices but also owing to the addition of equipment not entirely offset by the printers' Production Activity Index.<sup>7</sup> For example, in one company three events occurred. They began removing more solvent from their wipes before sending them to be laundered and disposed of the additional waste solvent themselves. The same printer conducted a cleanout of outdated product after shifting its product mix, causing a large amount of hazardous waste to be disposed. And lastly, their measurement method changed, resulting in more accurate measures of waste volumes.

The average percentage change shown in the last column of the table is based on average volumes released for each printer. For Missouri, the overall volume increases were greater than the decreases when the group is examined as a whole.

---

<sup>7</sup> Each printer reported a Production Activity Index (PAI). The PAI indicates the relative change in the facility's level of production between the baseline and endpoint data collection under PrintSTEP. This evaluation used the PAI to determine if a change in emissions/waste was the result of a change in environmental management practices, or if the change was due to increasing or decreasing production.

<b>Table 12: PrintSTEP Printers Change in Hazardous Waste (number of printers)</b>					
State	Hazardous Waste Generation				
	Number of Facilities*	Decreased	Increased	Unchanged	Average Percentage Change
Missouri	4	1 (25%)	3 (75%)	0	+112%
New Hampshire	28	20 (71%)	2 (7%)	6 (21%)	-14%
<b>TOTAL</b>	<b>32</b>	<b>21 (66%)</b>	<b>5 (16%)</b>	<b>6 (19%)</b>	
Note: Gross amount of waste generation was normalized based on production activity indicators provided by the facilities.					
*This number reflects the number of printers who submitted endpoint data on hazardous waste and generated hazardous waste. One New Hampshire printer generated hazardous waste at the end of the PrintSTEP pilot but not at the beginning, so no comparisons could be made.					
Source: Missouri and New Hampshire PrintSTEP Applications.					

For comparison purposes, Table 13 illustrates the number of non-PrintSTEP printers showing reduced quantities of hazardous waste manifested. (Non-PrintSTEP printers' data report the amount shipped, or manifested, as opposed to PrintSTEP printers, which reported waste generated. This distinction does not impact the like-to-like comparisons reflected in these tables.) Data were obtained from state databases for 25 and 70 non-PrintSTEP printers in Missouri and New Hampshire, respectively, and showed that 17, or 68%, of printers in Missouri decreased waste while 41% decreased waste in New Hampshire. Overall, 48% of non-PrintSTEP printers in Missouri and New Hampshire decreased waste during the pilot.

<b>Table 13: Number of Non-PrintSTEP Printers — Hazardous Waste Generation</b>				
State	Number of Facilities	Decreased	Increased	Unchanged
Missouri	25	17 (68%)	8 (32%)	0
New Hampshire	70	29 (41%)	41 (59%)	0
<b>TOTAL</b>	<b>95</b>	<b>46 (48%)</b>	<b>49 (52%)</b>	<b>0</b>
Note: Gross amount of waste generated was normalized based on the change in the number of employees from 2000 to 2003 for each state's commercial lithographic, gravure, flexographic, and screen printing industry.				
Source: Missouri's Department of Natural Resources and New Hampshire's Department of Environmental Services, 2001 and 2004 data; and U.S. Census Bureau, County Business Patterns, 2003; available at: <a href="http://www.census.gov/epcd/cbp/view/cbpview.html">http://www.census.gov/epcd/cbp/view/cbpview.html</a>				

From these limited data it can be observed that the pilot group showed better performance than the non-PrintSTEP group, with 66% of facilities decreasing hazardous waste generation or manifesting, as compared with 48% in the non-PrintSTEP group.



Looking at the states individually, in New Hampshire a majority of PrintSTEP printers showed decreases in hazardous waste during the pilot. This decrease is notable because during a similar time period, a minority of non-PrintSTEP printers did so. In Missouri, three out of four PrintSTEP printers showed increases while a majority of non-PrintSTEP printers showed decreases (noting that only four printers in the Missouri PrintSTEP group reported any hazardous waste at all). In both states, hazardous waste measurement in the PrintSTEP group was likely to be more accurate than for the non-PrintSTEP group owing to direct technical assistance during the pilot. There were other benefits separate from direct waste reduction. For example, two printers in Missouri changed from an LQG to a small quantity generator (SQG) during the course of the PrintSTEP pilot. This change had the benefit of reducing their regulatory burden, specifically training, reporting, and inspection requirements.

### ***Waste Water***

Most printers discharge their process waste water to their local sewer system, which in turn is managed by their local publicly owned treatment works (POTW). The POTW sets minimum requirements for dischargers and treats waste water before discharging it to surface waters.

PrintSTEP printers reported information on waste water discharge status, as shown in Table 14. All participating printers either discharge waste water to a POTW or do not discharge waste water at all. The purpose of collecting and presenting waste water information is to determine if any shifts in waste water management occur through participation in PrintSTEP. The reported data show that the waste water discharge status of PrintSTEP printers did not change in Missouri. In New Hampshire, no net change occurred. One printer previously discharged to a POTW and discontinued discharging effluent. However, another New Hampshire printer that previously did not discharge to a POTW reported the opposite change and now does. In this case, the printer is delivering rinse water from its plate developer to the POTW. Before PrintSTEP, this waste water was going to a holding tank and then was sent out as a hazardous waste. Since joining PrintSTEP the printer has been able to work with the POTW to have its waste water delivered on occasion to the POTW for treatment. Printers discharging to a POTW are not typically required to monitor specific pollutant concentrations; consequently, it was considered too burdensome to require this quantitative information for the purposes of this evaluation.

<b>Table 14: Waste Water Discharge Status</b>						
	Number of Facilities*					
	Missouri			New Hampshire		
	Baseline	End-point	Percentage Change	Baseline	End-point	Percentage Change
Discharge waste water to a septic system	0	0	—	0	0	—
Discharge industrial waste water to the sewer district (POTW)	9	9	—	22	22	—
Designated as a significant industrial user (SIU)**	0	0	—	0	0	—
Discharge waste water directly to surface water (NPDES permit)	0	0	—	0	0	—
No discharge	0	0	—	17	17	—
* This number reflects the number of printers who submitted endpoint data for waste water.						
** Any facility that discharges an average greater than or equal to 25,000 gallons per day of process waste water to the sewer system or meets other discharge criteria is considered an SIU.						
Source: Missouri and New Hampshire PrintSTEP Applications.						

Comparison data were not available for nonparticipating printers. Because waste water is controlled at the local level, it was not practical for the pilot states to obtain these data for printers in each municipality.

### **Storm Water**

The Clean Water Act (CWA) also regulates storm water runoff that has been in contact with industrial storage materials, wastes, loading docks, and other potential sources of chemical contamination. These regulations prevent chemicals and wastes from contaminating surface and groundwater. All industrial facilities that potentially discharge storm water containing pollutants to a surface water of the United States must apply for coverage under a NPDES permit. However, a permit is not required at certain facilities that can certify that a “no exposure” condition is maintained. “No exposure” is when all potential sources of contamination are kept under cover, protected from precipitation.

PrintSTEP printers were asked to identify items exposed to precipitation, now or in the foreseeable future, and whether drainage from these areas discharged to any surface waters or to a storm sewer system. The purpose of collecting and presenting storm water information is to determine whether printers changed their storm water management practices through participation in PrintSTEP. This information was reported on a checklist and is summarized in the following paragraphs. Most PrintSTEP printers documented “no exposure” to storm water. Overall, there was no change in Missouri and no net change in New Hampshire for PrintSTEP printers requiring a storm water permit.

Comparison data were not available for printers not participating in PrintSTEP.

Six printers in Missouri and 37 printers in New Hampshire had “no exposure” status at both the beginning and end of the pilot. In Missouri, the remaining printers<sup>8</sup> had storm water permits for the following reasons:

- Materials or products at uncovered loading docks (at endpoint only).
- Materials or products stored outdoors (except for products intended for outdoor use such as cars).
- Materials or products handled/stored on roads or railways owned or maintained by the certifier.
- Waste material.

In New Hampshire, the remaining two printers had storm water permits for the following reasons:

- Materials associated with vehicular maintenance, cleaning, or refueling (endpoint only).
- Spills/leaks resulting from maintenance of stacks of air exhaust systems.

One New Hampshire printer did not report their storm water status at the endpoint.

#### ***Use of Pollution Prevention Practices***

Pollution prevention means changing operations to generate less pollution in the first place, instead of treating and disposing of it after it is created. Through PrintSTEP, printers had access to free technical assistance to find ways to prevent pollution. PrintSTEP also encouraged pollution prevention by highlighting how a printer’s regulatory requirements decrease as the facility’s overall potential environmental impact decreases. The fewer pollutant releases a printer has, the fewer the regulatory requirements. As part of their PrintSTEP Applications, printers were asked to review a list of pollution prevention activities and mark which ones they employed. Printers then completed this exercise again at the end of the pilot program. Table 15 summarizes the results of the changes in the pollution prevention activities undertaken by PrintSTEP printers over the course of the pilot program.

<b>Table 15: Pollution Prevention Activities</b>						
Pollution Prevention Activities	Number of Facilities Implementing Pollution Prevention Activities					
	Missouri			New Hampshire		
	Baseline	End-point	Increase/Decrease/No Change	Baseline	End-point	Increase/Decrease/No Change
Eliminated chrome-based cleaners	1	1	—	12	16	▲
Installed and properly maintained silver-recovery units	4	5	▲	18	20	▲

<sup>8</sup> One printer documented more than one exposure type.

Properly maintained film and plate processing units (e.g., flow rates, squeegees, secondary containment, holding tanks, and pipes/tubing)	5	6	▲	n/a	n/a	n/a
Utilized "Code of Silver Practices" steps to recover silver from fixers	2	3	▲	n/a	n/a	n/a
Investigated/used developer and fixer recycling units for film processors*	4	5	▲	13	13	—
Investigated/used low replenishing rate film chemistry*	5	6	▲	22	23	▲
Investigated/used wash water recycling units for film and plate processors*	3	4	▲	12	12	—
Investigated/used digital, dry, or water-based proofing systems*	5	5	—	23	23	—
Instituted an ink inventory system to reduce waste ink disposal costs	6	6	—	n/a	n/a	n/a
Instituted a switch to low-VOC ink systems, such as UV-curable, water-based technology, or vegetable-based ink systems	7	7	—	20	19	▼
*Investigated/used stay open and cartridge ink delivery system for sheetfed offset lithographic inks	1	2	▲	19	19	—
Used chiller recirculators to lower temperature of fountain solutions to reduce evaporation and thus lower air emissions	3	3	—	14	12	▼
Instituted a switch to isopropyl alcohol-free fountain solutions or reduced concentration of isopropyl alcohol in fountain solution	3	3	—	25	25	—
Investigated the installation of filtration system for fountain solution recirculation system	4	4	—	10	9	▼

Switched to low-vapor--pressure or low-VOC cleaning solvents (less than 10 mm Hg at 20 degrees Celsius) to reduce air emissions and quantity of solvent purchased	5	5	—	21	20	▼
Eliminated the use of F-listed solvents and substituted D-listed or nonhazardous solvents to reduce the toxicity of hazardous waste generated	3	5	▲	25	22	▼
Instituted a solvent recycling/reuse system	1	0	▼	7	6	▼
Implemented a shop towel management policy so soiled wipers are stored in closed or covered safety containers to reduce air emissions Instituted a program to recover free liquids from shop towels either on-site or off-site, (i.e., gravity draining via false bottom collection drums, hand wringers, centrifuges, etc.)	5 2	6 6	▲ ▲	35 7	35 7	— —
Implemented a solid waste/recycling program by recycling all possible items from solid waste stream	7	7	—	24	23	▼
Reused and recycled pallets and skids to reduce solid waste	8	8	—	31	31	—
Collected and recycled used oil, other lubricants, and batteries	4	4	—	19	20	▲
Recycled parts washing fluids	4	4	—	8	9	▲
Implemented a program to manage and recycle spent fluorescent and high-intensity-discharge lamps	2	5	▲	24	29	▲
Where possible, used low-solvent, no-solvent, or water-based adhesives and glues	5	6	▲	14	17	▲

Where possible, used low-solvent, or water-based ink-jet inks	1	1	—	13	16	▲
Requested that the vendor take back all samples not consumed	7	7	—	10	14	▲
Used first-in, first-out inventory control system	8	8	—	33	35	▲
Covered all open containers of liquids and kept them closed	8	8	—	38	39	▲
Stored all materials to minimize damage from mishandling or accidents	7	7	—	39	39	—
<b>TOTAL</b>	<b>130</b>	<b>147</b>	<b>▲</b>	<b>536</b>	<b>553</b>	<b>▲</b>
* Indicates that the question asked in Missouri and New Hampshire differs slightly. In Missouri, the printers were asked whether they "investigated the use" of a particular pollution prevention activity. In New Hampshire, the printers were asked whether they "used" a particular pollution prevention activity.						
Note: The "n/a" indicates that the question was not asked on the PrintSTEP Application.						
Source: Missouri and New Hampshire PrintSTEP Applications.						

As seen in Table 15, while new pollution prevention practices were adopted during the PrintSTEP pilot, a few shifts away from some activities also occurred. The last row of Table 15 summarizes this information, showing overall increases in pollution prevention activities during the pilot for printers in Missouri and New Hampshire. Much of this increased activity can be attributed to the direct, on-site technical assistance provided by the PrintSTEP Coordinators, resulting in greater awareness of potential pollution prevention actions. It was also observed that printers who discontinued a pollution prevention practice often had an accompanying elimination of the associated process or equipment at their facility (e.g., silver recovery was no longer used because the printer switched to digital processing and no longer had silver at the facility). Lastly, many PrintSTEP printers were already practicing pollution prevention when they joined the pilot as would be expected from facilities interested in a voluntary program focused on environmental protection.

It was beyond the scope of this study to evaluate whether non-PrintSTEP printers or the sector as a whole changed pollution prevention practices during the same time period.

### **Regulatory Compliance**

Compliance improvements were reported during the PrintSTEP pilot. All but one of the printers in NH were out of compliance prior to joining PrintSTEP. As a result of PrintSTEP, all participants were brought into compliance. The specifics, per pilot state, are discussed below.

In Missouri, the SAG set a requirement that printers applying to PrintSTEP could not have ongoing compliance issues, as a few interested printers did. These issues were resolved before printers joined the program.

- Two printers were discharging silver in concentrations that exceeded the Metropolitan Sewer District limits; these discharges were discovered during the on-site visits. Both facilities had silver capture systems but both had accumulated silver in the lines. After the site visit, the lines were cleaned out. Both printers then changed their prepress workflow and work practices to avoid having to do this again.
- Two printers had storm water permits and were paying storm water fees, but didn't have exposed materials and thus did not require a permit. As a result of PrintSTEP, the permits were rescinded to save the printers and Missouri DNR staff the associated permit renewal fees, paperwork, and administrative time required.

Other waste management problems were resolved through PrintSTEP that were not related to compliance. These problems included assistance to a printer in finding a cost-effective local water-testing laboratory that was approved by the local sewer district and assistance to the city of St. Louis (through the MOU) in resolving an odor complaint against a local printer.

In New Hampshire, all but one of the participating printers were out of compliance at the start of the pilot, primarily related to their RTAP (regulated toxic air pollutant) emissions, storm water, and hazardous waste requirements. These issues, described below, were resolved before or immediately after printers joined the program.

- Most printers had not completed their RTAP demonstrations or their "no exposure" certification for storm water.
- For hazardous waste, many printers didn't know how to characterize their waste or were mischaracterizing their waste, and some printers generating hazardous waste did not have RCRA ID numbers. For example, many printers had questions on the waste classification of metal-containing inks.
- The most frequent RCRA compliance violations were improper labels or absence of labels on waste drums, and improper labeling of waste rag containers.
- For air compliance, recordkeeping to determine annual usage of raw materials was found lacking. Compliance with the New Hampshire DES requirements was too complex for most printers, and PrintSTEP and NHDES were able to provide direct technical assistance.
- One printer was discharging waste water to the septic system and needed to install treatment equipment.

Assistance from PrintSTEP during the application phase brought these facilities into compliance. Further, the process also greatly improved the printers' awareness levels regarding environmental issues. This awareness included reviewing materials before purchasing materials and properly disposing of expired materials or materials the companies no longer used.

During the endpoint telephone survey, printers were asked whether they thought their compliance had improved as a result of PrintSTEP. Overall, 86% of printers replied that their compliance improved, as shown in Table 16.

<b>Table 16: Printers' View of Their Change in Compliance Status During PrintSTEP</b>		
<b>State</b>	<b>Compliance Improved</b>	<b>Compliance Did Not Improve</b>
Missouri	83% (5/6)	17% (1/6)
New Hampshire	87% (26/30)	13% (4/30)
<b>TOTAL</b>	<b>86% (31/36)</b>	<b>14% (5/36)</b>
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>		

It is beyond the scope of this study to evaluate whether the non-PrintSTEP printers or the sector as a whole changed compliance practices during the same time period.

### ***Summary Assessment of Findings on Environmental Protection and Practices***

Assessing all pilot parameters as a whole, improvements were observed in some areas while in others little or no change was seen. A greater percentage of facilities reduced air and hazardous waste emissions in the PrintSTEP group than did in the general population of the two states, when corrected for activity level. Other environmental areas were assessed for the PrintSTEP group but not compared with the same areas of nonparticipating printers. For these areas, meaningful changes in performance on waste water and storm water were not seen; however, these areas are not typically the printing sector's primary environmental concern. An increase in pollution prevention activity of an average of 5% in the pilot states was observed. For all of these parameters it should be noted that only a small number of data points were available, in some cases as small as three (e.g., for New Hampshire non-PrintSTEP air emissions data). Lastly, an all-around improvement in compliance and awareness of environmental requirements for all participating printers was clearly seen. This improvement will undoubtedly have future positive impacts in terms of better waste management and recordkeeping practices.

Several PrintSTEP printers in Missouri grew considerably during the pilot, consequently increasing their waste streams. This growth was not always effectively or entirely normalized by the Production Activity Index (PAI) provided by the facilities. For example, one printer added two large presses and increased production considerably, as measured in tons. However, the company cut prices and its profit margin went down at the same time, reflecting the increasingly competitive nature of the industry. This company selected a PAI at the start of the pilot based on sales, which did not ultimately reflect the changes at the facility that would affect environmental releases. The PrintSTEP Coordinators observed that, in many cases, when printers joined the PrintSTEP program they also performed significant housekeeping and cleanouts that could conceal real changes in waste quantities from baseline to endpoint.



### ***Impact on Efficiency of the PrintSTEP Process for Printers***

This section presents information on the administrative efficiency of PrintSTEP for printers. The findings are based on phone interviews with the participating printers, as well as interviews with the state PrintSTEP Coordinators.

Two of the four pillars of PrintSTEP were designed to directly improve the efficiency of the regulatory process for printers. These pillars are presented here:

- **Regulatory Simplification.** With PrintSTEP's multimedia approach, printers' waste water, hazardous waste, storm water, and air requirements are all covered in one package. In designing PrintSTEP, regulatory simplification was intended to improve environmental performance while also making the process less time-consuming for printers.
- **Operational Flexibility.** When a printer makes a process change under PrintSTEP, in many cases, no approval is required. If the change does not result in an alteration to the printer's PrintSTEP levels, the changes needed to respond to market demands can be made without waiting for a lengthy approval process.

The following sections address the question of how efficient the PrintSTEP participants found the program to be, and whether it achieved the improved efficiency goals set forth in the program design.

#### ***Understanding of Environmental Requirements***

Changes in printers' understanding of environmental requirements were assessed. Printers were asked to assess their understanding of the environmental regulations before and after PrintSTEP. All printers felt they had gained a better understanding of their requirements during their participation in the pilot. The PrintSTEP Coordinators confirmed this improvement. Through the application process and the PrintSTEP materials, the participating printers improved their understanding of their environmental requirements.

At the beginning of the pilot, PrintSTEP printers were asked to characterize how well they understood their environmental requirements. At the endpoint, printers were asked to think back and characterize how well they had understood their requirements prior to joining PrintSTEP. Looking back, few printers thought they had had a good understanding of the requirements, as shown in Table 17. Considering air, hazardous waste, waste water, and storm water requirements, printers said they had least understood the air requirements prior to joining PrintSTEP, with only 19% reporting they had had a "very good" or "fairly good" understanding. The PrintSTEP Coordinator noted that the noncompliance issues at the start of PrintSTEP were mainly related to air (primary the New Hampshire RTAP requirements) or storm water requirements, and this observation was confirmed by the responses presented in Tables 17 and 18.

<b>Table 17: Percentage of Printers with a Good Understanding of their Environmental Requirements Prior to PrintSTEP</b>			
	Missouri	New Hampshire	Total
Air	17%	20%	19%
Storm Water	17%	27%	25%
Waste Water	50%	47%	47%
Hazardous Waste	67%	50%	53%
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>			

Printers had been asked this same question about their level of understanding of their environmental requirements two years earlier prior to joining PrintSTEP. At that time, many more printers *thought* they understood the requirements. Only after their PrintSTEP participation did they realize that they had not fully understood the requirements. In other words, they didn't know what they didn't know. This change in their perception was the case for every medium, and in both states, but again, was most pronounced for air requirements, as shown in Table 18, representing the responses for both Missouri and New Hampshire combined.

<b>Table 18: Change in Printers' Perception of Initial Understanding of their Environmental Requirements Prior to PrintSTEP</b>			
	% of printers who thought their pre-PrintSTEP understanding was "Good" prior to joining PrintSTEP	% of printers who thought their pre-PrintSTEP understanding was "Good" after two years in PrintSTEP	Difference
Air	49%	19%	-30%
Storm Water	45%	25%	-20%
Waste Water	71%	47%	-24%
Hazardous Waste	71%	53%	-18%
<i>Source: PrintSTEP pilot baseline and endpoint telephone surveys of participating printers.</i>			

The PrintSTEP Coordinators noted that this increased understanding goes beyond regulatory requirements, stating that the PrintSTEP process not only brought the printers into compliance, it also greatly improved their "awareness level" regarding environmental issues. This awareness included knowing to review materials before purchasing them and disposing of expired materials that are no longer used.

When asked why they didn't initially understand the requirements, the reason given most often for all media by the printers was that they were unaware of the regulations. The types of comments received from the printers include the following:

- "At the start of the program, [I was] not sure there were any air requirements."
- "We didn't know we were using hazardous materials."
- "I was new to the industry and didn't think about [the requirements] before PrintSTEP."

### ***Ability to Respond to Business Opportunities***

Operational flexibility was one of the pillars of PrintSTEP, and the evaluation sought to determine if PrintSTEP had been successful in providing operational flexibility. The baseline interviews at the start of PrintSTEP revealed that environmental requirements had impeded a business opportunity for only one printer. In the interviews conducted with participating printers two years later, one printer reported that his facility's participation in PrintSTEP enabled the company to quickly and easily respond to market conditions. Additionally, other printers did install new equipment without having to wait for state approval. Further details on situations where PrintSTEP positively impacted business opportunities can be found in the next paragraphs.

In Missouri, one printing facility was able to install an additional sheetfed lithographic press much more quickly than it could have, had the company not been a PrintSTEP participant. The facility first contacted the PrintSTEP Coordinator, who consulted the city's air permit chief. The air permit chief agreed that the new press could be covered under the existing PrintSTEP Agreement. The emissions from the new press were calculated to be 3 tons per year (tpy). Prior to the press installation, the facility's VOC emissions were 12 tpy, thus the additional 3 tons brought the company's total up to a total of 15 tpy. The facility was at PrintSTEP Air Level 2, which covers emissions up to 20 tpy. The PrintSTEP permit process took a total of three days, instead of an estimated three months under the traditional regulatory system. This efficiency saved the facility, state agency, and the city time and expenses in not having to formally undertake the traditional permitting approval process. It was also beneficial that the company had a single point of contact so it was able to find out easily what it did or did not need to do.

Another printer added four flexographic presses during the pilot program. This printer also changed to "zero VOC" inks and did not change their air emissions from the printing operations. A third printer exchanged printing presses in a "like-for-like" swap. The new press was more modern and had greater capacity, but did not increase the air emissions. The process for these facilities only took two days for each permit modification.

In all three situations, the printers remained within the same PrintSTEP air level, therefore, the permit modifications only required a visit from the PrintSTEP Coordinator. Under the traditional regulatory system, these permit modifications could have taken as much as three months and resulted in a 200-page permit request to the state. Instead, the process took only two or three days and saved the facility, the state, and the City of St. Louis the time and expense of the formal permitting process.

Further, some of the participating printers did receive approval of their PrintSTEP Notification or Agreement more quickly than approvals had been received under the traditional regulatory system, as shown in Table 19; an equal number saw no change in the turnaround time.

Table 19: Difference in Turnaround Time between PrintSTEP and the Traditional Regulatory System	
PrintSTEP Comparative Turnaround Time	Percentage of Printers
Shorter	47% (16/34)
About the Same	47% (16/34)
Longer	6% (2/34)
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>	

Most of the participants received a PrintSTEP Notification, rather than an Agreement, which does not require an official “approval” from the state agency. These printers for the most part did not have any permits or environmental approvals prior to PrintSTEP either, so it is to be expected that they would not see a significant difference between the two systems.

### ***Value of a Multimedia Approach***

The multimedia approach is a key design element of PrintSTEP, contributing to how the “regulatory simplification” pillar is implemented, as well as providing a holistic view of wastes to encourage implementation of the “pollution prevention” pillar. In addition to simplifying and consolidating printers’ cross-media regulations, PrintSTEP further implemented a multimedia approach by assigning PrintSTEP Coordinators, who served as a single point of contact to respond to printers’ multimedia questions.

Prior to joining PrintSTEP, some of the participants dealt with multiple state contacts for their different environmental media questions and requirements. Only one printer in Missouri and three in New Hampshire identified a single source they could contact for environmental information in their state. Results from the baseline interviews showed that nine printers in New Hampshire (22% of respondents) did not have multimedia releases and therefore did not initially feel the need for a multimedia point of contact. As discussed previously, however, many printers were unaware of their environmental requirements prior to their participation in PrintSTEP. Overall, a majority of printers saw an advantage in having a single point of contact to assist them.

During the course of the pilot, almost all of the printers contacted the PrintSTEP Coordinator, and more than 90% were satisfied with the information they received, including 80% who said they were “very satisfied,” as shown in Table 20.

<b>Table 20: Percentage of PrintSTEP Printers Who Contacted Their PrintSTEP Coordinator and Satisfaction Rates</b>						
	Percentage of Printers					
	Missouri		New Hampshire		Total	
	First Year	Second Year	First Year	Second Year	First Year	Second Year
Participants Who Contacted Their Coordinator	100% (8/8)	83% (5/6)	87% (33/38)	48% (15/31)	89% (41/46)	54% (20/37)
Participants <b>Very Satisfied</b> With Response	100% (8/8)	100% (5/5)	76% (25/33)	93% (14/15)	80% (33/41)	95% (19/20)
Participants <b>Somewhat Satisfied</b> With Response	0%	0%	15% (5/33)	7% (1/15)	12% (5/41)	5% (1/20)
Participants <b>Somewhat Unsatisfied</b> With Response	0%	0%	9% (3/33)	0%	7% (3/41)	0%
Participants <b>Very Unsatisfied</b> With Response	0%	0%	0%	0%	0%	0%
<i>Source: PrintSTEP pilot midpoint and endpoint telephone surveys of participating printers.</i>						

In the first year, a few New Hampshire printers said they had not been satisfied with the information they received when they contacted their PrintSTEP Coordinator. These printers stated the following reasons for their dissatisfaction:

- “Spoke with different contacts. No cohesive follow-up.”
- “I didn’t think program was applicable to my facility.”

During this time, changes in staffing for PrintSTEP in New Hampshire likely affected these comments.

In both states, those facilities that did not contact the PrintSTEP Coordinator said no situations arose where help was required.

During the second year of the pilot, about one-half of the participants contacted their PrintSTEP Coordinator, and all were satisfied with the information received. It is important to note here, as with other interview information, that the decrease in response rate for the endpoint survey is likely to have affected these results.

Printers were also asked what effect the multimedia coordination at the state agency had on the turnaround time of the regulatory process. One-half of the Missouri printers and 35% of the New Hampshire printers commented that PrintSTEP’s multimedia coordination at the

state agency sped up the regulatory process for them. Most printers thought PrintSTEP had no net effect on the timing of the regulatory process, as shown in Table 21.

<b>Table 21: Impact of the PrintSTEP Coordinators in Expediting the Regulatory Process</b>		
PrintSTEP Coordinator Impact	Percentage of Printers	
	Missouri	New Hampshire
Sped up the regulatory process	50% (3/6)	35% (8/23)
Had no effect on the speed of the regulatory process	50% (3/6)	65% (15/23)
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>		

In addition to tracking how many printers were in touch with the PrintSTEP Coordinator, the outcome of this contact was assessed qualitatively. Contact with PrintSTEP Coordinators often led to improvements at facilities, demonstrating the benefits of a multimedia regulatory approach in terms of both environmental quality and time/money. For example, during the initial application process, the Missouri PrintSTEP Coordinator toured each facility to review and advise the printers on their permitting, air quality, hazardous waste, solid waste recycling, waste water, and storm water procedures. In New Hampshire, however, the PrintSTEP Coordinator judged that state's pilot program should have met more often with participating printers. "The single point of contact is very important to help printers resolve their issues."

One unexpected significant occurrence was the change in New Hampshire's hazardous waste requirements during the PrintSTEP pilot. Both the New Hampshire PrintSTEP Coordinator and one of the PrintSTEP printers mentioned this problem as a major drawback. After the PrintSTEP pilot had started, New Hampshire implemented a Small Quantity Generator (SQG) Self-Certification Program that required additional action on every printer's part. This state requirement was not in effect at the time PrintSTEP was customized for New Hampshire; therefore it was not incorporated into the PrintSTEP workbook or other aspects of the pilot. When the SQG program came into effect, PrintSTEP was no longer a comprehensive multimedia program for many printers as it did not include these new requirements. Several printers voiced complaints about this situation, saying it caused confusion, given that PrintSTEP was advertised as a multimedia program.

It should be noted, however, that the PrintSTEP participants, as a result of being involved in PrintSTEP, received tailored one-on-one assistance to ensure their compliance with this new state requirement; this would not have occurred in the same manner had they not been involved in PrintSTEP.

### **Costs for Printers**

This section discusses participants' time spent on PrintSTEP recordkeeping and reporting requirements as compared to their time spent on these activities prior to joining PrintSTEP. What could not be quantified are the potential costs which printers were able to avoid as a result of PrintSTEP, including but not limited to: potential consulting fees, fines, lost

production due to permit delays, and the additional time spent learning environmental requirements without one-on-one assistance.

Missouri printers did see some reductions in their time requirements, with 67% spending less time on reporting under PrintSTEP, but most showing no improvements in their time spent on recordkeeping, as shown in Table 22. In New Hampshire, approximately one-half of the printers saw no change in the time spent on recordkeeping and reporting, while a fair number said their time spent was greater under PrintSTEP, and a few said their time decreased.

<b>Table 22: Change in Participants' Time Spent on PrintSTEP, as Compared with the Traditional Regulatory System</b>						
	Percentage of Participants					
	Missouri			New Hampshire		
	Decreased	Remained the Same	Increased	Decreased	Remained the Same	Increased
Time Spent on Recordkeeping	33% (2/6)	50% (3/6)	17% (1/6)	6% (2/31)	52% (16/31)	42% (13/31)
Time Spent on Reporting	67% (4/6)	33% (2/6)	0%	13% (4/31)	55% (17/31)	32% (10/31)
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>						

Printers were also asked to quantify how much their time increased or decreased for these activities under PrintSTEP when compared to their requirements prior to joining PrintSTEP. On average, PrintSTEP printers spent 12% more time on recordkeeping under PrintSTEP, and 6% more time on reporting, as shown in Table 23.

<b>Table 23: Magnitude of the Change in Participants' Time Spent on PrintSTEP, as Compared with the Traditional Regulatory System</b>		
	Average Percentage Change	Range of Change
Time Spent on Recordkeeping	+12%	30% less to 100% more
Time Spent on Reporting	+6%	50% less to 100% more
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>		

When asked why PrintSTEP took more time, printers generally stated that the additional time was needed because previously they had spent so little time on their environmental requirements. Almost all printers responding to this question indicated that the additional time was worthwhile. Some of the responses included the following:

- "We weren't doing much before, and now we have been keeping better records."
- "We were unaware of regulations at first, so there was a big increase at first, but now it's not that burdensome since I know what I did before."
- "I'm more aware of chemicals going in and out of facility and want to keep better track of what's coming in and out."

- “No one was keeping track of things being filed properly before. I maybe spend 30 minutes a month on it now, which is probably more than was done in the past, since I don't think anyone was really keeping records.”

Note that many of the participants were not complying with the environmental requirements prior to PrintSTEP and, as such, had spent little or no time on recordkeeping or reporting. After joining PrintSTEP and coming into compliance, their time spent on these activities increased. For example, in New Hampshire, most printers had not completed their RTAP calculations as required by the state. After joining PrintSTEP, they did learn of and complete their RTAP calculations. This step was perceived by some printers as an additional requirement that they had not performed under the traditional regulatory system, although they should have. One printer who said his time spent on recordkeeping and reporting increased by 80% explained that this increase was primarily owing to the RTAP calculations.

Additionally, for the purposes of this evaluation, PrintSTEP participants were required to submit updated RTAP calculations in 2005 for calendar year 2004. This was required only for the pilot evaluation. For all other years, and for non-participating facilities for all years, annual RTAP emissions are only required to be reported for sources that require permits. Some printers saw this as an additional burden.

Another reason that printers did not generally see reductions in the time spent on their environmental recordkeeping and reporting requirements could have to do with constraints in the implementation of PrintSTEP. For example, the nature of the media-specific fee collection in each state could not be altered. Media-specific programs are funded through fee collection, and fees are collected when reports, such as hazardous waste reports, are submitted. Media-program offices within the state agencies could not allow PrintSTEP to collect the fees or associated reports. As a result, PrintSTEP printers with multimedia requirements still had fees and reporting due at various times throughout the year; this reduced the potential benefits of PrintSTEP that could have been realized if the state agencies had been able to consolidate the collection of fees and/or reports, part of the original design of PrintSTEP.

### ***Summary Assessment of the Efficiency of PrintSTEP for Printers***

One of the goals of the designers of PrintSTEP was to offer a streamlined method for printers to address their environmental requirements. This concept of improved “efficiency” encompasses many facets, including the following:

- An easy way for printers to learn about and understand their environmental requirements for all media.
- Improvements in the regulatory process that would allow printers to respond to business opportunities more quickly.
- A multimedia approach that encourages a holistic view of operations so the impacts of any changes are considered across media.



- A process in which recordkeeping and reporting requirements are less time-consuming for printers.

In some of these areas, PrintSTEP offered significant improvements, while in others the pilot had little effect. A summary of each aspect of efficiency for printers follows.

Printers clearly gained an increased understanding of their multimedia environmental requirements. This understanding was their primary motivation for joining the pilot and their improved compliance and responses to the survey questions demonstrate that their understanding did improve.

The PrintSTEP pilot demonstrated that the program has the *potential* to allow printers to respond to business opportunities more quickly. The concept of allowing for operational flexibility and how it was implemented in PrintSTEP appears sound. It may well be a more sought-after or valuable feature in sectors where changes that impact emissions occur more frequently.

Regarding the "holistic view of operations," participants noted a significant value in having a designated PrintSTEP Coordinator in each pilot area. Almost all participants contacted their Coordinator at some point during the pilot; the vast majority were satisfied with their interactions. In several cases, this interaction led to regulatory or environmental improvements.

With regard to time requirements, Missouri printers did see some reductions, with 67% spending less time on reporting under PrintSTEP, although most printers saw no change in the time spent on recordkeeping. In New Hampshire, approximately one-half of the printers saw no change in the time spent on recordkeeping and reporting, while a fair number said their time spent was greater under PrintSTEP, and a few said their time decreased. This finding may be the result of three factors: a) many printers were not meeting their environmental recordkeeping and reporting requirements prior to PrintSTEP and as a result, did not spend any time on these activities prior to the pilot; in fact, almost all of the printers responding to questions indicated that the additional time spent on environmental requirements under the pilot was worthwhile; b) because of constraints within state organizations, there were still some media-specific reports and fees due at various times throughout the year which could not be consolidated; and c) in one pilot state, a new state requirement (the NH SQG self-certification) was introduced after the pilot was launched.

Additionally, most printing facilities are small and are not required to obtain permits such as state operating permits for their air emissions. These types of facilities have not experienced lengthy or time-consuming permit approval processes. The streamlined aspects of PrintSTEP, therefore, were not seen as a benefit by such facilities. A streamlined program like PrintSTEP could expect to see greater efficiency improvements in industry sectors in which more multimedia regulatory reporting and approvals are required.

### ***Impact on Efficiency of the PrintSTEP Process for State Governments***

Interviews were conducted with key staff at each state's environmental agency both at the baseline and after pilot implementation. Interviews focused on assessing the pre-PrintSTEP organization of the state agency and the procedures and level of effort required from the state's perspective to administer a sector-based, multimedia program as compared with a standard media-based approach.

Improvements inherent in the PrintSTEP objective of regulatory simplification, which is one of the pillars of PrintSTEP did have positive impacts on states.

- **Regulatory Simplification.** If regulations are simplified for the regulated community, it will also be simpler for state personnel to administer. In addition, EPA provided a state guide on PrintSTEP to each participating state which they tailored to reflect state/local requirements, as applicable, as well.

### ***Efficiency in Missouri Pilot***

In Missouri, interviews were conducted with staff from the Air and Land Protection Division, Hazardous Waste Program, Water Pollution Control Program, and Air Pollution Control Program.

#### **Organization of Missouri DNR**

In Missouri DNR, media programs are compartmentalized with some single-media units working together on cross-media activities. Those mentioned during the staff interviews included the following:

- **Multimedia inspections** coordinated by inspectors in the St. Louis regional office who are cross-trained. In these instances, Missouri DNR personnel stated that facilities seem to appreciate the cross-media coordination, as it appears to be less time consuming for them.
- **Technical assistance programs (TAPs)** in the state designed to address multimedia concerns, including multimedia environmental compliance inspections and an institutional enforcement coordinating committee that crafts multimedia enforcement solutions.
- **"Concurrence of Action" forms** that allow different permit programs to inform and obtain permission from each other for multimedia actions.

For general questions and very basic permitting questions (e.g., questions about whether a permit was required), printers can call the TAP. Small businesses typically call for general information. For more specific questions they are referred directly to the individual programs' staff. Because the Air and Land Protection Division covers permitting for all programs, this division is the de facto contact for multimedia questions, including permitting. The group serves as a permit Coordinator to help companies figure out which media permits they may need and refers them to the appropriate permitting staff and to the TAP. This function is

publicized by other Missouri DNR program staff members, who call the division if they learn of a facility that may have multiple permitting issues. Before the implementation of PrintSTEP no specific point of contact existed for printers. Under the pilot program, the PrintSTEP Coordinator served as that single point of contact, but only for the St. Louis region as that is the designated pilot area. Other agencies were involved with PrintSTEP, including the Metro Sewerage District, the St. Louis City Air Pollution Control Division, the St. Louis County Health Department, the EPA Region 7, the Air Conservation Commission, and local counties and cities.

### **Comparison of the Traditional Missouri DNR Structure with the PrintSTEP Program**

The existing regulatory system at the Missouri DNR was described by media office staff in the following manner:

**Air.** Missouri air permits include the following:

- **General Permit.** This permit is used for industry sectors as a group, but no general permit exists for printers.
- **Basic Permit.** This permit is for facilities for which potential emissions are below a major source threshold.
- **Intermediate Permit.** This permit is for facilities for which potential emissions are greater than a major source threshold, but facilities elect to take restrictions to keep emissions below that threshold. This permit is similar to a Federally Enforceable State Operating Permit (FESOP).
- **Title V Permit or an Intermediate Permit (can apply for either type of permit).** Facilities with a Title V Permit can increase emissions up to the regulatory limit rather than having an artificial cap. It is harder to expand operations with an Intermediate Permit; there may be as much as a 180-day delay. With Title V, however, compliance assurance monitoring measures have to be put in to provide a higher degree of certainty. In contrast, the Intermediate Permit requires additional record keeping to prove that the facility's emissions are below the major source threshold.

**Waste Water.** In Missouri, one state agency staff member is responsible for industrial pretreatment permits for the state. Printers in the pilot area discharge to POTWs; no direct dischargers exist. Most printers in Missouri would not be expected to have a permit from a POTW. Statewide, only seven or eight printers are SIUs and would therefore be permitted by a POTW and undergo inspections. Non-SIUs would not have a permit. No categorical pretreatment standards are in place for printers; thus the POTW sets the standards. POTW rules differ by county.

**Storm Water.** At least two printers in the pilot area held general permits for storm water prior to the start of the PrintSTEP pilot. The state-level industrial pretreatment person interviewed did not know whether additional printers in the pilot area held storm water permits.

**Hazardous Waste.** Hazardous waste permits in Missouri are only issued for treatment/storage/disposal (TSD) facilities. Facilities that generate hazardous waste register, obtain an ID number, and pay fees. The Missouri hazardous waste categories are slightly more stringent than the federal categories.

**Consolidation.** Across all media programs, limited reporting consolidations were available to PrintSTEP printers during the pilot. Printers still have their monthly sewer bills, state storm water fee, and air and waste fee. However, on-site compliance assistance assessments (conducted by the PrintSTEP Coordinator) were consolidated across media and such assessments proved to be very helpful in identifying areas for environmental improvements.

**Costs for Missouri DNR.** Missouri estimated the time it takes to process a standard construction permit for printers the size of those included in PrintSTEP. This estimate is compared with the time it took to implement the PrintSTEP pilot per printer in St. Louis, MO. Table 24 displays the estimates.

<b>Table 24: Total Estimated State Staff Time to Implement the PrintSTEP Pilot per Printer in St. Louis, MO</b>
Total <b>estimated</b> time for implementing PrintSTEP per printer in St. Louis, MO.
Notifications: 69 hours/printer Agreements: 132 hours/printer
Total <b>estimated</b> time for processing standard permits in Missouri
Water (typically not applicable to printers): 12 hours/printer Air (occasionally applicable to printers): 20 hours/printer
<i>Source: Interviews with PrintSTEP Coordinator.</i>

Table 24 reflects the approximate time it took for the state PrintSTEP coordinator to complete the following types of activities:

- Soliciting printers, conducting workshops and hearings, reviewing Applications and setting up the Repository;
- A visit to each interested facility at least twice, with the second visit to work with the printer to complete the printer's Application and provide other on-site environmental assistance;
- Developing, drafting and finalizing Notifications and Agreements; and
- Completing MOUs with city air, county air, and sewer departments.

Table 24 also reflects the time it takes to process standard construction permits in MO for printers the size of those included in PrintSTEP; the activities encompassed within that time estimate include the following:

- Responding to questions regarding obtaining a construction permit;
- Logging the application and checking for completeness by the initial review unit (when the 90 day clock starts);

- Submitting the application into the queue for technical review;
- Reviewing the application for potential and expected emissions levels and, if emissions levels indicate, modeling ambient pollutant concentrations beyond the fenceline; the review includes additional questions and clarifications as needed by the staff;
- Drafting the permit and setting any operating or performance conditions as necessary;
- Providing the draft permit to the applicant for review; and
- Issuing the permit.

It should be noted that MO charges the printer a fee per hour it takes to process the permit application; as a result, there is a built-in incentive for the printer to provide all the required information up-front thereby reducing the time it takes to process the standard construction permit.

As shown above, the activities reflected in the PrintSTEP estimate are much broader than the activities encompassed in processing a permit under the traditional system.

The PrintSTEP Coordinator assessed that the time required of the state would decrease dramatically were a printer joining PrintSTEP today. Because the PrintSTEP Coordinator was working on a process that was under development, every time a different issue arose the Coordinator had to consult with the SAG to determine how to proceed. This learning curve would not apply in the future. However, some efficiencies were seen, including the ability to focus only on those issues relevant to a particular printer's specific processes. Being familiar with printing processes as the Coordinator was, the Coordinator did not need to ask about every piece of equipment; a permit writer unfamiliar with the sector might have to do this.

### ***Efficiency in the New Hampshire Pilot***

For the evaluation, interviews were conducted with staff from the New Hampshire SBTAP and pollution prevention, water pollution, enforcement, outreach, air, and waste management programs, all of which are located in the New Hampshire DES (NHDES) offices in Concord, New Hampshire.

#### **Organization of NHDES**

Each media program within NHDES operates separately. However, some cross-media activities do occur. Those mentioned during the staff interviews included the following:

- **Cross-media initiatives** with individual sectors in specific areas, primarily driven by SBTAP. For example, work was undertaken with the automotive sector in compliance, pollution prevention, and best management practices. Other multimedia efforts have involved dry cleaners, hospitals (for mercury), and spray-booth operations.
- **Cross-media inspections** occurring approximately six times per year. For these inspections, the separate media programs collaborate on targeting and performing the inspection. The time needed for multimedia inspections has been reduced and is now almost the same as that required for separate inspections. The time required of the facility is roughly the same.
- **Compliance assistance efforts** of the pollution prevention group often have a cross-media focus. The outreach/communication Coordinator's activities are often multimedia.

Given the fact that the DES is organized by media, no single point of contact for printers existed before the creation of the PrintSTEP Coordinator role. In the past, for this type of assistance small printers contacted the municipality and larger permitted printers contacted the person listed on their permit. Others would contact the DES main number or the public information center. Referrals to the pollution prevention group are also sometimes provided during inspections or in letters of deficiency, as the pollution prevention group has a multimedia focus.

#### **Comparison of the Traditional NHDES Structure with the PrintSTEP Program**

The existing regulatory system at the New Hampshire DES was described by DES staff in the following manner:

**Air.** In the traditional regulatory system, every facility must determine whether its potential emissions are less than the state thresholds for criteria pollutants and air toxics (known as regulated toxic air pollutants or RTAPs). Where the facility exceeds a threshold, a permit is required. If a facility's potential emissions for criteria pollutants are greater than the state threshold but lower than the federal threshold, an operating permit (Federally Enforceable State Operating Permit) is required. The FESOP must be renewed every five years. The state usually processes applications in less than 90 days. The backlog of permits to be processed is significant because the renewal process for facilities that have had operating permits includes updating emission information, additional modeling, etc. If a facility's potential emissions of criteria pollutants or an air toxic are greater than the applicable

federal threshold, a Title V permit is required. Only a few printers in the state have a Title V permit. If a facility makes modifications that increase its potential emissions, it may need to apply for a FESOP or a Title V permit. Both the FESOP and the Title V permits require public notice. When a facility with a FESOP plans modifications that increase emissions, the modification goes through the same process as a new application, including public notice and an opportunity for public meeting, if requested.

An RTAP evaluation which includes calculating daily and annual emissions of RTAP chemicals used at the facility is required for all businesses using any RTAP chemical. However, facilities are not required to submit the data to the state unless the levels are greater than the threshold levels for a permit. Most printers do use one or more RTAPs below threshold level; however, prior to PrintSTEP, they had not completed their required RTAP evaluation. Once they joined PrintSTEP, all printers were to complete their RTAP demonstrations and submit the calculations with their Applications. Note that the RTAP demonstration requirement was not new or specific to PrintSTEP, although some printers viewed it as such because they had not completed the calculations previously. As a result, some printers considered this process to be a burdensome aspect of PrintSTEP, when actually it was an existing state requirement prior to PrintSTEP.

**Waste Water.** Most printers discharge to POTWs. Municipalities with POTWs may set discharge limits for individual facilities, and facilities discharging to the POTW are required to pay a fee. The process is controlled locally; consequently, the requirements (such as pollutant limits and the process for making changes in place) will vary among municipalities. Printers in areas without a POTW typically ship their waste water off-site for treatment, in which case management of their waste water falls under the hazardous waste regulatory system. No printers in the state are known to be direct dischargers.

**Storm Water.** New Hampshire has not taken full delegation of the EPA's NPDES storm water program. Therefore, the state handles outreach and assistance, but EPA Region 1 handles permits. No printers are known to have a NPDES storm water permit in the state. Thus, the regulatory system for both PrintSTEP and non-PrintSTEP printers is the same.

**Hazardous Waste.** Every facility generating hazardous waste must obtain an EPA identification number. Based on the quantity of hazardous waste generated, a facility will fall into one of several generator status categories. Generator status determines reporting, storage, and other requirements. Most printers are hazardous waste generators and should have an RCRA ID number. If a facility increases its hazardous waste generation to the point that its generator status changes, it must notify the state.

**Consolidation.** Some consolidation of reporting requirements was possible in New Hampshire. With respect to waste water, only the three Agreement printers had waste water sampling requirements, and New Hampshire was successful in combining the waste water report with the annual PrintSTEP report. This consolidation reduced one printer's reporting

requirement from quarterly to annually. The other two printers had annual reporting requirements so no real reduction in quantity of reports occurred; however, the printer could combine all required reporting in one report and submit it to DES and the local POTW. For hazardous waste, all facilities generating hazardous waste are required to submit quarterly activity reports. When the state receives hazardous waste manifests, it develops a report of all activity for that facility. The state then sends the report to the facility on a quarterly basis to verify the information, and the facility submits its fee. The state employs the same process for the biennial reporting required under RCRA for LQGs. The PrintSTEP program was not able to consolidate quarterly hazardous waste reporting requirements because these reports are required by state statute. The state's new SQG Self-Certification<sup>9</sup> program and the Hazardous Waste Coordinator Certification program for full quantity generators (FQG)<sup>10</sup> are not included in the PrintSTEP program, as these programs were introduced after PrintSTEP was implemented.

**Cost for NHDES.** New Hampshire estimated the time it takes to process a standard air permit for printing facilities; only air permits would apply to New Hampshire printers. This time is compared with the estimate for implementing the PrintSTEP pilot per printer in NH and shown in Table 25.

<b>Table 25: Total Estimated State Staff Time to Implement the PrintSTEP Pilot per Printer in NH</b>
<b>Total estimated time for implementing PrintSTEP per printer in New Hampshire</b>
Notifications: 72 hours/printer Agreements: 126 hours/printer
<b>Total estimated time for processing standard permits in New Hampshire</b>
Air (occasionally applicable to printers): 59 hours/printer
<i>Source: Interviews with PrintSTEP Coordinators.</i>

The type of support provided by the PrintSTEP Coordinator during the PrintSTEP Application process and reflected in the table above includes the following:

- Contacting printers;
- Reviewing Applications for completeness;
- Contacting printers for missing support materials;
- Assisting printers with their RTAP evaluations;
- Conducting site visits to assist printers in completing their Applications;
- Developing, drafting and finalizing Notifications and Agreements;

<sup>9</sup> Under the Small Quantity Generator Self-Certification Program, each SQG reviews its hazardous waste management procedures, conducts a self-inspection of its facility, and certifies compliance to DES every three years.

<sup>10</sup> A FQG generates, in any one month, more than 220 pounds of hazardous waste (about ½ drum), 2.2 pounds of acutely hazardous wastes, or 220 pounds of contaminated soil or absorbent. Under the Hazardous Waste Coordinator (HWC) Certification program, any FQG must have on staff a certified HWC trained to ensure compliance with hazardous waste rules.



- Publishing required public notice(s); and
- Setting up the Repository.

The RTAP demonstration was much harder and time consuming for printers to complete than was originally anticipated. The PrintSTEP team provided extensive support and it is believed that this support had a strong influence on the large number of printers choosing to participate in the pilot.

Processing standard air permits in NH includes reviewing the application forms for completeness, reviewing emission calculations for accuracy, reviewing applicable rules for insertion into the permit, preparing the permit, discussing the permit with the source, and posting the permit for public notice.

The information displayed in Table 25 (above) shows that PrintSTEP required more time than the traditional system. However, the activities reflected in the PrintSTEP estimates are broader and include multimedia issues and requirements whereas the activities cited for approval of a traditional permit are specific to air permits only. Because of the support needed to get the pilot going and bring printers up-to-speed, it is difficult to make a true comparison with traditional permitting. The PrintSTEP Coordinator attributed the time consumed with PrintSTEP to three primary factors:

- **Learning curve.** Both the state and the printers experienced a steep learning curve in processing the Applications and the ensuing Agreements and Notifications. On the Agreements, a considerable amount of time was spent on waste water treatment to include the rules that vary locally from site to site, as well as inclusion of all requirements for an air permit. Once a template was established for these rules, the Agreements became much easier (e.g. time spent was reduced by more than half compared to the beginning of the pilot).
- **Changes in personnel.** The state PrintSTEP Coordinator changed several times over the course of the pilot.
- **RTAP review.** The printers were expected to perform the RTAP evaluations by themselves because these evaluations were part of their existing state requirements, but in reality, most printers needed assistance due to the complex nature of the state regulation.

Taking these factors into consideration, it is clear that the time requirement for a PrintSTEP printer joining today would be much shorter. For example, developing the fourth Agreement (not included in this evaluation) took less than half the time of each of the previous three.

### ***Summary Assessment of the Efficiency of PrintSTEP for State Governments***

While streamlining and improving the effectiveness of state government operations were not among the primary goals of PrintSTEP, such steps are embodied in the regulatory simplification and public involvement pillars of the program. In fact, if less administrative burden is placed on a printing facility, the state agency administering the program benefits

directly. Because PrintSTEP was a pilot and had a steep learning curve, as well as required significant preparation, administrative advantages were not immediately felt. However, participants widely reported that once the program was established, they believed these factors would improve.

Another administrative aspect is the positive impact on staffing by a program such as PrintSTEP. The state point of contact is able to work efficiently to resolve problems that are sector-specific. Working this way will have economies that affect the industry sector directly, and the quality of technical and compliance assistance will improve. In general, state participants in PrintSTEP felt that being a part of PrintSTEP was a positive experience.

### ***Impact on Public Involvement***

#### ***Design of Public Involvement Component***

One of the pillars of PrintSTEP is providing an enhanced opportunity for public input on printers' environmental requirements. A Community Handbook was developed by the national PrintSTEP team, and was customized by each pilot area. This handbook described the PrintSTEP process for public involvement and also provided background on the printing industry. The concept of enhanced public involvement was incorporated into the PrintSTEP pilot by establishing processes to ensure the following:

- The community and interested parties are notified when a printer applies for a PrintSTEP environmental approval.
- The public can review any PrintSTEP Application and provide input before the state finalizes decisions.
- Printers talk with interested people early in the PrintSTEP process to promote cooperation.

**Notifying the Public.** All PrintSTEP Applications were placed in a public information repository. Information repositories were located throughout each pilot area. Many were at public libraries, and both pilots created websites where Applications were posted. In Missouri, information repositories were established in six St. Louis County libraries and two local Missouri DNR offices near the volunteer printers. In New Hampshire, information repositories were established at the NHDES office and in the town offices of towns of participating printers with PrintSTEP Agreements. Applications were also available via the PrintSTEP website.

A registry was also established where interested parties could register to be notified of any new Applications or other PrintSTEP activities. As described in the following section *Community Outreach Activities*, each PrintSTEP Coordinator and individual printers made considerable effort to inform the public about the PrintSTEP process and the opportunity for the public to get involved. No one registered with the PrintSTEP Registry in either pilot area.

In addition to filing the Application in the information repository, the program also notified the public of all PrintSTEP Agreements through one of several venues including newspaper announcements, signs at the facility, and letters to public officials. Some printers with "Notifications" also took these additional steps to notify the public even though it was not required of them.

**Commenting on Applications.** The PrintSTEP design also included a process to address community comments. A component of this process was the opportunity for public meetings to be held, if requested, so that the printer, regulators, and the public could discuss concerns. If a case arose in which significant issues were not resolved at the public meeting, the process included a step whereby the state would work with the community and the printer to prepare a Community Involvement Plan (CIP). This plan would outline how the state agency, the printer, and the community would address the issues discussed at the public meeting. The CIP would describe what actions must be taken for the PrintSTEP process to move forward. The CIP might also describe actions to be taken after the Agreement is finalized. A CIP template was developed by the national PrintSTEP workgroup to facilitate the process.

No comments were received on any PrintSTEP Application, therefore no public meetings were held and no CIPs were developed.

**Facilitating Partnerships.** Many federal and state laws have public involvement components. Public involvement requirements exist because lawmakers recognize that it is important to hear from communities on local issues. The PrintSTEP design went one step further by encouraging communities and printers to actually build a partnership to work through environmental issues together. These partnerships were intended to go beyond PrintSTEP's formal public involvement (described above), so that the public could have ongoing involvement in the PrintSTEP process.

The PrintSTEP Coordinators and several printers in each pilot area initiated numerous outreach efforts to inform the public about the pilot and invite public participation; however, no community members responded.

### ***Community Outreach Activities***

To inform the community about PrintSTEP and opportunities for involvement, stakeholders in each pilot area conducted extensive outreach activities. These activities are summarized below.

When the state agency set up its PrintSTEP pilot program, one of the first steps was to establish a stakeholder advisory group (SAG). The purpose of the SAG was to help the state make decisions on many of the details of how PrintSTEP should be implemented. The advisory group included representatives from the community, industry, and government and was assembled to ensure that the pilot implementation would better represent and meet the

needs of all stakeholders. The specific outreach activities of these groups in each state are discussed in detail in "Implementation of the PrintSTEP Pilots."

To summarize, each pilot area conducted numerous activities to raise public awareness about the PrintSTEP pilot and the opportunity for public involvement. The PrintSTEP Coordinator conducted or organized these activities including the following:

- Development of a community handbook.
- Distribution of press releases.
- Publication of articles in newsletters.
- Creation of PrintSTEP website.
- Contact with local officials.
- Establishment of information repositories.
- Organization of workshops for printers.
- Publication of brochures.
- Placement of radio announcements.

In addition to these activities, individual printers conducted their own community outreach activities. All printers in Missouri and five printers in New Hampshire conducted some individual outreach activity (in addition to the PrintSTEP Coordinator's outreach) to let the public know about PrintSTEP. Most posted a sign at their facility, several placed an announcement in the newspaper and/or sent letters to public officials, and one printer held an open house (which no one attended).

#### ***Level of Public Involvement in the PrintSTEP Pilot***

As mentioned earlier, public response to PrintSTEP was limited. Public involvement can be summarized in the following manner:

- No parties registered with the PrintSTEP Registry in either pilot area.
- No comments were submitted on any PrintSTEP Application, therefore public meetings did not need to be held, and Community Involvement Plans (CIPs) did not need to be developed.
- No community members expressed interest in PrintSTEP after numerous outreach efforts to inform the public about the pilot and invite public participation.
- Active public involvement was limited to those community representatives who volunteered to join a Stakeholder Advisory Group.

#### ***Evaluation of the Stakeholder Advisory Group (SAG) Process***

To evaluate the effectiveness of the public involvement component of PrintSTEP, a survey of participating community members was originally planned as part of the PrintSTEP evaluation. However, no individual community members commented on any PrintSTEP Applications or placed their names in the PrintSTEP Registries. The PrintSTEP Coordinators solicited comments from their SAGs on the community involvement aspect of PrintSTEP. This approach was used to gather as much information as possible on why the public's interest was so limited.

The assessment of the SAG concept is based on input from those SAG members who responded to the stakeholder survey, and from the PrintSTEP Coordinators. The SAG was a key element of the public involvement component of PrintSTEP. Note that responses from the community representatives on the SAGs were also rather limited, despite numerous efforts to solicit their input. Two people responded to the community survey in Missouri, both of whom worked for community organizations in the area. Seven people responded to the stakeholder survey in New Hampshire; all seven worked either for the state environmental agency or for EPA Region 1. Their responses are summarized below.

**The diverse nature of the SAG is what made it work well.** All respondents said they were satisfied or very satisfied with how the PrintSTEP SAG worked. In both states, the aspect of the stakeholder advisory process that was found effective was the cross-sectional composition of the stakeholder group. A Missouri respondent said that having “representatives from the printing industry, the regulatory agencies, and the community was an excellent idea.” Another respondent felt that the group’s “broad representation kept the process even and did not allow for any single opinion to dominate.”

**Maintaining this diverse representation can be challenging.** In New Hampshire, broad stakeholder involvement was achieved early in the development of the program, but less so after that. The members representing the public tended to decrease their participation. Also in New Hampshire, more regulatory people (than community representatives overall) were involved in the stakeholder group. One respondent commented that stakeholder input is critical to developing programs and should be continued, but it is keeping stakeholders’ attention that is challenging. This challenge may have been compounded in New Hampshire due to turnover in the PrintSTEP Coordinator position during the early stages of the pilot.

**Maintaining communication is needed, while minimizing the burden on members’ schedules.** Missouri maintained the diverse representation of the SAG largely by having frequent meetings. The PrintSTEP Coordinator in New Hampshire thought more frequent meetings or communications among stakeholder advisory group members were needed, and the sporadic nature of the communications could have contributed to the lack of on-going participants from the New Hampshire stakeholder group. This thought was echoed by a SAG member who said that members should have been kept more up-to-date. Conversely, in Missouri, one criticism was that there were too many meetings to attend. To improve the efficiency of the Missouri SAG meetings, a facilitator was brought in, which SAG members agreed improved the progress of the group discussions and shortened meetings.

### ***Evaluation of the Printers' Involvement with the Public***

In addition to the feedback from SAG members, participating printers also provided input on the public involvement component of PrintSTEP through phone interviews. Their views are presented below, along with additional information from SAG members.

**The public involvement component of PrintSTEP was not viewed as providing any direct benefit for participating printers.** The usefulness to printers of PrintSTEP's public involvement component was assessed based on telephone survey responses. Findings show that printers generally did not find the public involvement component of PrintSTEP to be beneficial. Specifically:

- None of the printers said they learned about community concerns through the PrintSTEP public involvement process. For example, one printer held an open house and no one attended. This printer had also posted a sign outside the facility and put an announcement in the newspaper. This printer thought his facility's involvement efforts did not provide any direct benefit.
- Four-fifths of the printers responding (83%, or 34 of 41) said that the public involvement component of PrintSTEP was not beneficial. For example, respondents said that they "didn't see any benefit" to conducting outreach activities. When asked *why* they thought the public showed such limited interest, most printers said their impacts were too small to warrant such attention. For example, one printer stated, "I don't think [the public has] much of an interest. They don't see print shops as a threat to them or the environment."
- The remaining printers (17%, 7 of 41) found the public involvement to be "somewhat useful." These printers did not receive any feedback from the community, but thought it was a good opportunity to "let the community know [that printers] are aware of environmental issues." One printer said he does "tell some customers about PrintSTEP and that people are receptive, but the general public is apathetic unless the subject directly involves them."

**Other stakeholders thought public interest was so limited because of the relatively low environmental impacts of the printing industry.** Stakeholders interviewed said the printing industry in general is not perceived to be a business posing adverse effects on the environment. If a member of the community were to focus attention on environmental protection that attention would most likely be focused on a bigger industry or a neighborhood business directly affecting the community member's environment. Several respondents stressed that they didn't think it was a negative outcome that community interest was so limited. The printing industry is perceived to present a low risk to the environment. Historically, the public rarely speaks up unless the facility presents unresolved problems (e.g., odor or noise complaints). In this case, it seemed to some stakeholders that members of the public didn't perceive that they needed to weigh in on the issues presented. In some cases lack of an organized, active, and involved community (or neighborhood) organization also may have contributed to the lack of community involvement.

**Few stakeholders thought changes to the PrintSTEP design would result in greater community interest.** The stakeholders that did offer suggestions for improving community outreach suggested: more open houses at printers' facilities; additional local press releases; more meetings with local community leaders; and participation in community events (e.g., school graduations, town parades, sporting events). Other stakeholders did not think additional efforts or changes to the pilot design would result in any public participation. On this note, these stakeholders suggested that no further attention be focused on public interest or involvement.


### ***Summary Assessment of PrintSTEP Public Involvement***

Public involvement was one of the pillars in the design of the PrintSTEP program. In addition, public involvement was one of the key elements that made the project different from anything EPA and the stakeholders, as a group, had tried before. In the design stage, extensive planning went into incorporating and encouraging public involvement in PrintSTEP. During implementation, considerable time and effort were spent to elicit public participation. A variety of outreach activities to inform the public did not result in input from the community. However, it is not possible to know how the public responded to the outreach information. Several scenarios are possible:

- Did members of the public read press releases (or newspaper announcements, signs, or newsletter articles) and, based on what they read, feel reassured that printers were generally an environmentally responsible industry? If so, PrintSTEP's public involvement efforts were an effective and worthwhile outreach tool.
- Did members of the public ignore the PrintSTEP announcements, thinking that the environmental impacts of printing are not enough of a concern for their valuable free time? If so, the time, energy, and expense spent on informing an indifferent audience was not the best use of resources.
- Were outreach efforts insufficient to reach those members of the community who would have been interested in participating? If so, more costly or extensive efforts (e.g., TV or radio announcements) would be warranted only if evidence indicates that the public would be interested.

Without knowing which of these scenarios occurred, it is assumed that some aspects of all scenarios may have played into the final lack of public interest. Results from stakeholder interviews suggest that the second scenario is most likely (i.e. the environmental impacts of the participating printers were not of public concern). In future projects, a method should be devised to assess the level of public interest prior to designing a public involvement program and conducting extensive outreach activities. This assessment could be initiated through the one component of the public involvement design that was a clear success: the SAG, which included representatives of the community. The SAG's input into the implementation of the program was essential. However, most of the public involvement aspects of PrintSTEP were largely finalized prior to the SAG's involvement. This development work was done at the national level, and included extensive and passionate input from national advocates for public involvement. Similar to the other program components, the Community Handbook

developed by the National PrintSTEP team was intended as a guide, where each SAG would use their knowledge and expertise to determine an appropriate level of effort and identify the most appropriate and cost-effective form of public outreach for their community. It is not certain that a local SAG could have foreseen the lack of public response to PrintSTEP, but this group is the best resource to develop an effective public outreach plan for a given geographic location.





## Benefits and Drawbacks of Participating in PrintSTEP

### Benefits

During the telephone survey at the end of the PrintSTEP pilot, printers were asked about benefits they saw from their involvement in PrintSTEP. The majority of printers responding (57%, or 20 of 35) said they gained a better understanding of their company's environmental impacts. Printers expressed a variety of motivations for joining PrintSTEP; however, the most frequent response was that they joined to improve their environmental compliance and better understand their requirements. PrintSTEP met this need, as most printers consider one of the primary benefits of their participation to be this understanding. The majority of PrintSTEP participants were out of compliance prior to their involvement with the pilot; PrintSTEP brought these printers into compliance. Printers made the following comments:

- "Everyone in the shop is aware of the environmental impact of what they are doing. It differentiates us from other printers."
- We have "a greater awareness of hazardous materials. We found ways to reduce consumption of materials ... saving money."
- "We were able to get into compliance without worrying about punitive action from the government."
- "I don't have to wonder if we're doing the right thing [regarding environmental requirements]; I'm sure we are."

The second most frequently stated benefit was having a single point of contact for environmental questions. Printers felt having access to the PrintSTEP Coordinator improved communications and their relationship with the environmental officials:

- "Just having a real person who provides guidance and assistance as opposed to punitive threats" is the greatest benefit.
- "I feel comfortable calling the state now and know who to call."

Table 26 summarizes printers' responses to the benefits they realized from involvement in PrintSTEP.

Table 26: Benefits Printers Saw from Their Involvement in PrintSTEP	
Benefit	Percentage Responding
Better understanding of the requirements/environmental impacts of their materials	57% (20/35)
Single cross-media contact for printing	29% (10/35)
Other: consolidation of requirements; community responsibility/public image	9% (3/35)
No benefits seen <sup>11</sup>	6% (2/35)
Source: PrintSTEP pilot endpoint telephone survey of participating printers.	

<sup>11</sup> One printer said they were involved with "pre-press only." The other did not provide an explanation.

The state PrintSTEP Coordinators were also asked about the benefits of PrintSTEP, based on their experience. Both Coordinators found the program to be a valuable approach to improving the environmental performance of small businesses. The Missouri Coordinator stressed the value of multimedia assessments in identifying opportunities for reduced environmental impacts. He also stated that he found plant-wide air limits to work very well and thought the PrintSTEP Air Levels should serve as a model for other programs.

The New Hampshire Coordinator stressed the benefit of bringing printers into compliance, and helping them to maintain compliance through the simplified process offered through PrintSTEP. She also noted other benefits including promoting environmental awareness, helping printers learn to review their materials and implement pollution prevention, and providing operational flexibility.

### **Drawbacks**

During the telephone survey at the end of the pilot, printers were asked to describe what they saw as the drawbacks from their involvement in PrintSTEP. Of the 16 printers responding to this question, 62% (10 of 16) said they did not see any drawbacks. The remaining six respondents gave a variety of responses, as summarized in Table 27. The following specific comments were made:

- "Initially, it was extremely time-consuming. I had to do things that my competitors did not. In the long term, though, I think it was worth it."
- "It was an extra burden that I don't think we should even be involved in. I had to hire someone for RTAP calculations." (Note: RTAP was a NH state requirement regardless of PrintSTEP.)

<b>Table 27: Drawbacks Printers Saw from Their Involvement in PrintSTEP</b>	
<b>Drawback</b>	<b>Percentage Responding</b>
None	63% (10/16)
Initially it required a lot of time (but not after the first year)	13% (2/16)
Time-consuming compared to the traditional system	13% (2/16)
Requires a definite commitment by the owner	6% (1/16)
Higher costs for PrintSTEP printers; everyone should do this	6% (1/16)
<i>Source: PrintSTEP pilot endpoint telephone survey of participating printers.</i>	

The state PrintSTEP Coordinators were also asked about the drawbacks of PrintSTEP. The Missouri Coordinator found the lack of community participation to be the pilot's greatest drawback. In thinking ahead to how PrintSTEP concepts could be implemented in other areas of the state, or in other sectors, he thought there could be difficulty in applying the model. Much of the success of PrintSTEP, he said, is based on having a single point-of-contact who is knowledgeable about the sector and the sector's requirements. To duplicate the approach, he stated, would require training the proper staff to provide sector-specific, multimedia assistance.

The NH Coordinator found the voluntary design of the pilot to be a drawback in that it did not ensure a level playing field for all NH printers. She felt that printers in the program who are now in compliance put a lot of effort into coming into compliance, as compared to the effort put in by non-participating printers which remains unknown. If PrintSTEP became mandatory, it is anticipated that it would level the playing field and bring more printers into compliance. Additionally, she noted that being a new program, the process was very time-consuming at first for both the state agency staff and the printers. The printers had to work through the RTAP information for the first time, even though it was an existing program required by NH regardless of PrintSTEP. Some of the printers thought they were in compliance going into it the program, only to find out they were not and that work was needed to come into compliance.

### **Overall Satisfaction with PrintSTEP**

During the telephone survey at the end of the pilot, printers were also asked how satisfied they were with PrintSTEP. Their responses are summarized in Table 28.

<b>Table 28: Participating Printers' Satisfaction with PrintSTEP</b>		
Level of Satisfaction	Percentage Responding	
	Missouri	New Hampshire
Very Satisfied	100% (7/7)	79% (23/29)
Somewhat Satisfied	0%	21% (6/29)
Somewhat Unsatisfied	0%	0%
Unsatisfied	0%	0%
<i>Source: Endpoint telephone survey of printers.</i>		

The PrintSTEP Coordinators were also both very satisfied with the pilot. The New Hampshire Coordinator stated that PrintSTEP had resulted in greatly increased compliance and awareness of environmental impacts for the printers involved in the program. In the long run, she commented, there will be cost savings to businesses and the state agency.

## Summary of Findings

The evaluation findings are portrayed under two headings: a) The achievement of PrintSTEP goals; and b) Printers' perspectives on benefits, drawbacks and satisfaction with PrintSTEP.

### ***Achievement of PrintSTEP Goals***

The national PrintSTEP team established the goals of PrintSTEP which directed the design of the pilot program. The goals were met for the program to a greater or lesser extent and in various ways as described below.

#### **Goal 1: Enhance Environmental Protection**

With regard to enhancing environmental protection and practices, improvements were observed in some areas while in others little or no change was seen. While air emissions and hazardous waste generation increased when summed across participating facilities, the results did show that a greater number of PrintSTEP facilities decreased air emissions and hazardous waste releases as compared with non-PrintSTEP facilities during the pilot, when corrected for activity level. Across both states, 51% of PrintSTEP printers reduced air emissions during the pilot as compared with 38% in the non-PrintSTEP group. Across both states, 66% of PrintSTEP printers decreased waste during the pilot compared to 48% of non-PrintSTEP printers. With regard to waste water, there was no net change in the discharge status of PrintSTEP printers. Similarly, there was no net change in the number of PrintSTEP printers requiring a storm water permit.

In addition, other indirect measures of environmental performance were observed. The pilot led to improved compliance for 86% of the participating printers and promoted pollution prevention and overall environmental awareness. These factors greatly enhance environmental protection.

#### **Goal 2: Increase Use of Pollution Prevention Practices**

Pollution prevention activity increased by an average of 5% for PrintSTEP printers. This increased activity can be attributed to the direct, on-site technical assistance provided by the PrintSTEP Coordinators, resulting in greater awareness of potential pollution prevention actions. It was also observed that printers that discontinued a pollution prevention practice often had an accompanying elimination of the associated process or equipment at their facility (e.g., silver recovery was no longer used because the printer switched to digital pre-press applications and no longer had silver discharges). Lastly, many PrintSTEP printers were already practicing pollution prevention when they joined the pilot as would be expected from facilities interested in a voluntary program focused on environmental protection.

### **Goal 3: Improve Efficiency of the Regulatory Process for Printers**

One of the goals of the designers of PrintSTEP was to offer a streamlined method for printers to address their environmental requirements. This concept of improved “efficiency” encompasses many facets, including:

- A streamlined methodology for printers to learn about and understand their environmental requirements across all media.
- Flexibility in the regulatory process to allow printers to respond to business opportunities more quickly.
- A process in which recordkeeping and reporting requirements are less time-consuming for printers.

In some of these areas, PrintSTEP offered significant improvements, while in others the pilot had little effect. A summary of each aspect of efficiency follows.

Printers clearly gained an increased understanding of their environmental requirements. This understanding was their primary motivation for joining the pilot and their improved compliance and responses to the survey questions demonstrate that their understanding did improve.

The PrintSTEP pilot demonstrated that the program can allow printers to respond to business opportunities more quickly. The concept of allowing for operational flexibility and how it was implemented in PrintSTEP appears sound. However, since few printers experienced operational changes during the course of the pilot program, when all participants were surveyed, the majority of printers saw no change in turnaround time to process their environmental permits or requirements.

Participants noted the significant value in having a designated PrintSTEP Coordinator in each pilot area. Almost all participants contacted their Coordinator at some point during the pilot and the vast majority were very satisfied with their interactions.

With regard to time requirements, some Missouri printers did see reductions, with 67% spending less time on reporting under PrintSTEP; however, most saw no improvements in time spent on recordkeeping. In New Hampshire, approximately one-half of the printers saw no change in the time spent on recordkeeping and reporting, while a fair number said their time spent was greater under PrintSTEP, and a few said their time decreased. This finding may be the result of four factors: a) many printers were not meeting their environmental recordkeeping and reporting requirements prior to PrintSTEP and as a result, did not spend any time on these activities prior to the pilot; in fact, almost all of the printers responding to questions indicated that the additional time spent on environmental requirements under the pilot was worthwhile; b) due to constraints within state organizations, there were still some media-specific reports and fees due at various times throughout the year which could not be consolidated; c) a new state requirement (the NH SQG Self-Certification program) was

introduced after the pilot was launched; and d) participants in NH had to submit updated RTAP emission calculations in 2005 for the purposes of this evaluation.

#### **Goal 4: Improve Efficiency of the Regulatory Process for State Governments**

Launching and establishing this pilot program proved to be more time-intensive for state environmental agencies than the traditional regulatory system. Because PrintSTEP was a multi-media pilot with a steep learning curve and required significant preparation, administrative advantages were not realized during the timeframe of the pilot. However, PrintSTEP Coordinators commented that after the initial setup (including establishment of MOUs, teaching state required reporting, and other requirements, the process became more streamlined and efficient. The state PrintSTEP Coordinators were able to work efficiently to resolve problems that are sector-specific.

Both state PrintSTEP Coordinators were very satisfied with the pilot. As one put it, PrintSTEP had resulted in greatly increased compliance and awareness of environmental impacts and would result in cost savings to businesses and the state agency in the long run.

#### **Goal 5: Enhance Public Involvement**

While the opportunity for public involvement was significantly enhanced through the PrintSTEP pilots, the general public did not show any interest in PrintSTEP. Certainly, the opportunity to obtain information was available to anyone interested in finding it. The findings of the pilot show that the public did not appear interested in getting involved with an environmental program for this industry sector. This lack of public interest was interpreted by several stakeholders as an indication that the public did not perceive problems with the participating printers and therefore did not become involved in the PrintSTEP pilot.

#### **Goal 6: Provide Motivation for Stakeholders to Participate in PrintSTEP**

The evaluation findings showed that most printers were motivated to join PrintSTEP in order to improve their environmental compliance and better understand their environmental requirements. PrintSTEP met this need, as printers consider one of the primary benefits of their participation to be this improved understanding. The benefits realized under PrintSTEP outweighed the drawbacks of the pilot program in that printers overall were very satisfied with the program. This would indicate that there is sufficient motivation for printers to participate. Another motivation cited for joining was to save time and effort related to environmental requirements. PrintSTEP did not provide this benefit to the majority of participants. For most participants, time requirements increased or remained the same during PrintSTEP, although possible reasons for this were described under Goal 3, above.

The potential for flexibility in making process modifications and responding quickly to business opportunities was realized in PrintSTEP where those situations arose. This flexibility was a potential motivation for both printers and state environmental agencies to participate in the pilot.

The state environmental agencies were motivated to participate as a test of improved program administration designed to improve overall environmental protection. Upper management in both Missouri and New Hampshire's environmental agencies enthusiastically supported the program. With the potential for increasing the efficiency of the environmental requirements for the printing sector, motivation was provided for the ongoing involvement of this stakeholder group. The pilot was more time-consuming than the traditional system, but PrintSTEP Coordinators saw the potential for increased efficiency once the pilot's implementation phase was completed. The state agencies were very satisfied with the pilot overall, indicating the motivation for state agency involvement exists. Additionally, endeavors in both states are examining application of similar models to other industry sectors.

Finally, the general public stakeholders in PrintSTEP clearly did not have a strong motivation for participating. Industry and government personnel involved in PrintSTEP inferred that the participating facilities did not present the perception of significant environmental harm. As noted, the public is more motivated to participate in such a program if they perceive that significant problems exist which will impact them.

#### ***Printers' Perspectives on Benefits, Drawbacks and Satisfaction with PrintSTEP***

During the telephone survey at the end of the PrintSTEP pilot, printers were asked about the benefits they saw from their involvement in PrintSTEP. The majority of printers responding (57%) said they had gained a better understanding of their company's environmental requirements and impacts. The second most frequently stated benefit was having a single point of contact for environmental questions. Printers felt that having access to the state PrintSTEP coordinator improved communications and their relationship with the environmental officials.

With regard to drawbacks, 62% of respondents said that they did not see any drawbacks. Those who experienced drawbacks cited the amount of time required as the most significant drawback. However, it should be noted that many printers were not meeting their regulatory obligations prior to PrintSTEP.

With regard to respondents' overall satisfaction with PrintSTEP, 100% of Missouri printers were very satisfied, 79% of New Hampshire printers were very satisfied and 21% were somewhat satisfied.

## Recommendations Based on the PrintSTEP Experience

### *Recommendations Specific to PrintSTEP*

The following recommendations are based on the findings in this evaluation report and are presented to those who would consider a PrintSTEP approach.

#### ***Fully consolidate printers' requirements for reporting and payment of fees***

As noted, restrictions in the state environmental agencies did not allow PrintSTEP to fully consolidate all reporting requirements. For example, the schedule for reporting hazardous waste generation (and for paying the associated fees) differed from the schedule for reporting and the fee schedule for air emissions. PrintSTEP was not able to consolidate the reporting or the fees. Under a supplemental PrintSTEP cooperative agreement, the MO DNR has developed a state consolidated reporting form and is exploring possible applications within the state. Such consolidation would further facilitate a more fully-integrated multimedia program.

#### ***Implement the Materials Use Worksheets***

The national PrintSTEP team developed process-specific worksheets to help printers estimate their emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). These worksheets are designed to focus on the higher VOC-releasing materials at printing facilities, so printers can complete their estimates quickly, without wasting time on emissions that are insignificant. These worksheets were not consistently used in the pilot.

#### ***Offer online tools for air calculations and reporting***

With improving efficiency as a PrintSTEP goal, developing online tools would be an effective next step. An electronic version of the Materials Use tables could streamline the calculations. The ability to complete and submit PrintSTEP Applications online could also improve efficiency. Under a supplemental PrintSTEP grant, the NH DES is developing an electronic version of the RTAP calculation method. Once finalized, the final tool should be made available in an electronic format.

#### ***Maintain ongoing communications with PrintSTEP Participants***

More frequent communications with printers after they join the program would build on the PrintSTEP foundation established and could promote continuous improvements. Information could be added to the state PrintSTEP websites. The training workshops for printers held at the launch of PrintSTEP could be continued to provide refresher training, perhaps annually, and highlight new regulations and pollution prevention technologies.



## ***General Recommendations for Future Pilot Programs***

Members of the national PrintSTEP team proposed general recommendations for future pilot programs. These recommendations go beyond PrintSTEP and can be taken into account in future pilot programs sponsored by the EPA and/or the states.

### ***Recommendation 1: When planning a multiyear pilot, define a process for maintaining regular communication.***

Monthly stakeholder conference calls with the National PrintSTEP team throughout the pilot were extremely valuable for sharing information among the pilot states, keeping stakeholders informed, providing the state Coordinators with regular and easy access to expert opinions of the stakeholders, and reporting on milestones. For a pilot of this duration, ongoing communication is critical. Having a standing meeting time each month was very helpful. The meetings were sometimes brief, but the system provided an opportunity to stay in touch. Everyone in the national stakeholder group was invited to these calls during the term of the pilot, regardless of whether or not they participated.

### ***Recommendation 2: Ensure that sufficient incentives exist to attract participants to pilot programs.***

Before a pilot program is initiated, it is advisable for the program developers to vet the idea with a subset of the local target audience. It is worthwhile to discuss the incentives for participation in order to obtain feedback prior to implementing the pilot in that area or with that particular population. The PrintSTEP Coordinators felt that the more intimately familiar they were with the industry being targeted, the more tailored and effective the program can be. Further, if a state already has a more-streamlined regulatory structure in place, an industry sector is less likely to participate in a program with similar objectives. This situation arose with the third grantee, Minnesota, where there were insufficient incentives for printers to participate. Conversely, if a “pain point” exists within a state in regard to environmental regulation (e.g., a particularly complex environmental requirement), the state and targeted industry have further incentive to participate in a pilot that provides additional assistance to alleviate that pain point.

### ***Recommendation 3: Develop partnerships with knowledgeable stakeholders to enhance outreach and implementation.***

Partnerships for implementation are a key to success. The two active pilots, Missouri and New Hampshire, had national trade associations involved in outreach to the printers when the PrintSTEP pilot was first introduced in each state. In Missouri, an active State Advisory Group worked with the state, local and national trade association representatives to support PrintSTEP and encourage printers to participate. In New Hampshire, the local and national trade association actively participated in workshops throughout the state to educate printers on the program. In the case of the third pilot, the local trade association declined to participate because of workload, which was thought to have an affect on the low level of printers’ interest. The credibility provided by industry-savvy stakeholders was crucial to

enhance buy-in and trust in the program itself. Further, knowledgeable stakeholders can formulate solutions to technical problems and questions encountered during implementation. They also are often the source of ideas for regulatory innovations. Knowledgeable stakeholders do not only come from industry, but also from community groups, local government bodies, or elsewhere. These partnerships with stakeholders can exist and be productive even without the development of a formal “advisory committee.”

***Recommendation 4: Where feasible, meet with the target audience to explain the pilot .***

In PrintSTEP, copious outreach and assistance materials (e.g. the workbooks) were developed. Missouri and New Hampshire held meetings with printers in their pilot areas in order to present the PrintSTEP concepts, identify the most important sections of the workbook, and respond to questions. These meetings proved to be successful at enticing participants.

***Recommendation 5: Provide technical and compliance assistance to pilot participants as appropriate.***

Provision of direct, one-on-one technical and compliance assistance was very effective in both earning the trust of participants and bringing all participants into compliance early in the pilot period. Such assistance helped to lay the groundwork for continued compliance and progress implementing pollution prevention options.

***Recommendation 6: Assess the interest in a public participation component when designing the pilot.***

If significant public interest surrounds the topic that the program addresses, it is important to incorporate a public participation component into the pilot program. However, it is worthwhile to clearly assess the level of public concern before developing a public outreach component. Feedback may be elicited from relevant local community groups in various ways, formally (e.g., surveys, interviews) or informally (e.g., discussions, meetings). Sometimes public concern may be perceived on the national level that does not clearly exist on the state or local level, where the pilot is to be implemented. If, in fact, public interest and concern are apparent, the state or local group implementing the pilot program needs to determine the best way to address it and the level of effort required.

If a pilot includes a public participation component, keep community outreach materials succinct. Feedback from the SAGs was that the PrintSTEP *Community Workbook* was too lengthy. The Missouri DNR addressed this concern by summarizing the key concepts from the community workbook in a short brochure.

***Recommendation 7: Take advantage of the opportunity to apply effective elements of pilot programs elsewhere.***

Incorporation of the entire PrintSTEP program may not be feasible for some local and state environmental agencies. Also, the numbers of facilities that need a different type of

regulatory approach may be too low to warrant such an undertaking. However, distinct elements of the program may be an ideal fit within certain states or localities.

One element of the program was the workbook. Development of a regulatory roadmap that puts regulatory language into industry specific terms can be readily accomplished using the PrintSTEP workbook as one example. The state of Florida has provided such a workbook to the printing industry and the State of Wisconsin is currently in the process of developing a printing specific regulatory workbook.

Use of the Materials Use Tables for air permitting issues is another relatively easy-to-implement component of PrintSTEP. Upon revision of their permit requirements for the printing industry, the Ohio Department of Environmental Protection incorporated the Materials Use tables into their rulemaking. The Florida Department of Environmental Protection is also using the Materials Use tables for the development of their proposed regulatory changes impacting the printing industry.

Other elements include the methodology developed for community outreach and the use of a diverse stakeholder group to develop the program. Using consensus to build a program can result in a stronger and more effective program.

***Recommendation 8: Where feasible, implement new opportunities for improvement even after initiation of the pilot.***

States identified additional ideas for streamlining the regulatory process through their involvement in PrintSTEP. For example, NH DES is designing a computer-based model that will ease the difficulty of RTAP analyses. NH intends to continue the PrintSTEP program beyond the timeframe for the national pilot. In addition, in New Hampshire the annual report for “notification status” printers that have not made changes merely consists of signing a response card certifying compliance. In Missouri, the DNR drafted a comprehensive multi-media reporting form and will explore options for application within the state.

***Recommendation 9: Develop and communicate an evaluation strategy prior to implementation of the pilot.***

Prior to implementing a pilot, organizers should prepare a detailed evaluation strategy and circulate it for review. This document should explain the approach and rationale for the evaluation, including the methods to be used for information collection and the audiences to be addressed. All roles and responsibilities should be clarified in this document. The evaluation strategy developed for PrintSTEP was essential in the design of the program, from the development of the PrintSTEP Application to the selection of questions for the telephone survey. Although the evaluation deviated from the plan (i.e. a control group was determined to be too difficult to enlist), it formed the foundation and rationale for all related decisions.

It is important to reinforce to all pilot participants that they are responsible for both implementing the program and providing input for the evaluation. This expectation needs to be clearly stated as participants are recruited and subsequently join. Failure to make this expectation explicit can create tension later when pilot participants are asked to supply data and information. The commitment to the pilot must extend to the evaluation as well.

***Recommendation 10: Choose an evaluation approach commensurate with the level of participation in the pilot.***

The level of effort expended on the evaluation should be proportional to the participation and extent of the pilot. A small pilot may be evaluated with a streamlined effort. Certain activities, such as conducting phone surveys with the private sector, are labor intensive and time consuming. Limiting interviews to state personnel and a small number of other stakeholders may reduce the resource requirements.

## Appendices

Appendix A – Minnesota PrintSTEP Pilot Summary

Appendix B – Sample Survey Instrument: End-point Survey for Printers

Appendix C – Sample PrintSTEP Application Form

# **Appendix A:**

## **Minnesota PrintSTEP Pilot Summary**

## Introduction

A PrintSTEP pilot project was also planned in St. Cloud, Minnesota, but was concluded due to lack of interest from printers. While Minnesota baseline information does not exist, a summary of the Minnesota pilot is presented here. Information summarized from interviews with state staff is included in this section.

## History

As in Missouri and New Hampshire, Minnesota received an EPA cooperative agreement to implement a PrintSTEP pilot program. The Minnesota Pollution Control Agency (MPCA) hired a PrintSTEP coordinator to run the program. PrintSTEP materials (i.e., *Printers' Plain Language Workbook* and *Community Handbook*) were customized to reflect state-specific requirements and were mailed to all printers identified in the pilot area of St. Cloud prior to hosting any information sessions. Through research conducted by the PrintSTEP coordinator, 32 eligible printers were identified in the St. Cloud area. The program was publicized to these printers in several ways:

- were invited to attend information sessions (three were held);
- printers received letters from MPCA, a joint letter of support from the printing trade groups, and a letter from a Twin Cities printer encouraging participation; and
- printers were individually contacted by phone to see if they had questions on the program, and were offered site visits to assist with their Application.

Months after the application deadline, the Minnesota PrintSTEP pilot had not received any Applications.

Based on individual phone conversations with the printers, the PrintSTEP coordinator had found two or three printers who were potentially interested, but had not completed their Applications. No other printers were interested in joining the program. The low level of interest was cause for concern; running a pilot program that had to be coordinated across media offices for only a few printers was not likely to be cost-effective. Following extensive discussions with EPA and management at MPCA, the Minnesota PrintSTEP pilot was terminated.

## Factors Contributing to the Lack of Participation

According to MPCA staff, the Minnesota PrintSTEP Coordinator, EPA and several printers interviewed by MPCA, the following factors contributed to the lack of participation in PrintSTEP:

- *Regulatory simplifications were already in place in Minnesota.* PrintSTEP combines multi-media environmental requirements into one system, administered by one agency to simplify permitting. In Minnesota, regulations were already largely simplified. An innovative program had been implemented where most printers get a non-expiring Air Registration permit that has a one-page Application. Other printers do not have operations that require an air permit. For hazardous waste, MPCA had simplified reporting by supplying printouts of the facility's previous annual report and allowing facilities to simply mark revised quantities and return the form. In addition, hazardous waste fees and the Department of Revenue's hazardous waste taxes were already combined. Regarding water permitting, most printers do not have stormwater or wastewater permits due to the nature of their operations. Given the extent of regulatory reform that had already occurred in the state, most printers perceived that they would not benefit significantly from the regulatory simplification offered by PrintSTEP.
- *Smaller printers did not want to provide release and emissions data.* The PrintSTEP Application asked for release and emission information, much of which printers never had to submit to MPCA before. Being a voluntary program, small printers chose not to participate given the effort required to complete the Application as compared to the perceived benefits.

- *MPCA's extensive Workbook was distributed prior to meeting with printers.* Minnesota had mailed their Workbooks out to each eligible printer in the area prior to the PrintSTEP information sessions. Based on his conversations with printers, the PrintSTEP coordinator also noted that printers found the PrintSTEP Workbook to be overwhelming. In order to be a comprehensive manual for all environmental concerns for every size of printer, the Minnesota PrintSTEP Workbook ended up being over 100 pages long. Many printers did not feel they had the time to invest in reviewing the Workbook.
- *The community in St. Cloud did not show interest.* After extensive outreach to encourage public involvement, no members of the community expressed interest in participating in the program. During meetings in the winter of 2000-2001, members of the Minnesota PrintSTEP Stakeholders Advisory Group expressed that the printing industry in St. Cloud is not enough of a concern for the public to be involved. If the public had reason to be concerned and there had been greater community involvement, printers may have been more interested in joining as a way to interact with concerned members of the public and to improve their image.
- *Free pollution prevention assistance was already available in MN.* PrintSTEP encouraged pollution prevention primarily by offering free technical assistance and by highlighting how reduced releases and wastes lead to reduced regulatory requirements. Free technical assistance was already available to Minnesota printers through two sources: Minnesota Technical Assistance Program (MnTAP) and MPCA's Small Business Assistance Program.

#### **Options Considered to Increase Participation**

- Before concluding the PrintSTEP pilot, MPCA investigated several options for increasing participation.
- *Emphasize the expected increase in compliance.* PrintSTEP has a strong compliance assistance component. The pilot program considered stressing how PrintSTEP participation would improve their compliance across regulations. This approach has been successful in New Hampshire's PrintSTEP pilot. However, Minnesota was phasing out inspections of smaller media sources and Very Small Quantity Generators making it difficult to back up such an incentive.
- *Expand the PrintSTEP pilot area.* Intensive effort went into marketing the 32 eligible printers in the St. Cloud pilot area. This effort did not result in any printer Applications to join the program. Expansion of the pilot area may have produced enough applicants to run a meaningful pilot, however, extensive resources would be required to market to multiple areas, or statewide. Given the level of effort expended in St. Cloud with no applicants responding, it seemed likely to the PrintSTEP coordinator that similar efforts in additional areas would result in few, if any applicants.
- *Reduce annual fees.* A reduction in fees was investigated to attract participants, however this was not considered a sustainable incentive. Additionally, a fee reduction alone might not be enough of an incentive for printers who are largely satisfied with the existing regulatory structure.
- *Provide other incentives.* Other incentives to increase participation were also investigated. For example, free membership to the Minnesota Waste Wise program was considered. This program usually requires a \$200 membership fee. Minnesota Waste Wise is a one-stop shop for waste reduction information and assistance. Eight printers in the pilot area were interviewed to determine if such an incentive, combined with the existing PrintSTEP benefits, would make PrintSTEP more attractive. The Waste Wise incentive did not appear to be enough to change printers' decisions about whether or not to participate in PrintSTEP. Other incentives were considered, however, any



significant additional incentives could skew the intent of PrintSTEP in that printers may be joining for add-on incentives only, rather than the benefits inherent to the program.

## **Appendix B: Sample Survey Instrument**

### **End-point Survey for Printers**

## Telephone Survey for Printers: End-of-pilot Survey

1. In the past year, did you contact the PrintSTEP coordinator? [Bill Hernlund in Missouri or Tara Olson in New Hampshire]

YES

NO - SKIP TO Q1c

- a. How satisfied were you with the information obtained from *(name of state contact person and office/office)* Were you...

Very satisfied - SKIP TO Q2

Somewhat satisfied - SKIP TO Q2

Somewhat unsatisfied, or

Very unsatisfied

- b. Why weren't you satisfied with this information?

Passed me to someone else

Weren't knowledgeable

Didn't have time to help me

Other

SKIP TO Q2

- c. Why not?

DIDN'T KNOW WHO TO CALL

COULDN'T REACH THEM

DIDN'T NEED HELP

OTHER

2. In the past year, have you obtained information from your technical assistance provider:  
For NH, this would be anyone in the Small Business Development Center, such as Andrea O'Brien, Mark Melessa, Rudy Cartier.  
For MO, this would be anyone in the Urban Outreach Office, such as Nancy Morgan or LaRhonda Garrett.

YES

NO - SKIP TO Q2c

- a. How satisfied were you with the assistance obtained from *(technical assistance provider/center name)*? Were you..

Very satisfied - SKIP TO Q3

Somewhat satisfied - SKIP TO Q3

Somewhat unsatisfied, or  
Very unsatisfied

- b. Why weren't you satisfied with the assistance from (*Technical assistance provider/name*)?

Passed me to someone else  
Weren't knowledgeable  
Didn't have time to help me  
Other

SKIP TO Q3

- c. Why not?

DIFFICULT TO ACCESS  
NOT ENOUGH USEFUL INFORMATION THERE  
DIDN'T KNOW ABOUT IT  
DIDN'T HAVE TIME/TOO BUSY  
OTHER (SPECIFY)

3. In the past year, have you used the PrintSTEP Workbook or other PrintSTEP documents?

YES

NO - SKIP TO Q3d

- a. Which documents?

PrintSTEP WORKBOOK  
COMMUNITY HANDBOOK  
FACTSHEET

- b. How satisfied were you with the content and format? Would you say you were....

Very satisfied - SKIP TO Q4  
Somewhat satisfied - SKIP TO Q4  
Somewhat unsatisfied, or  
Very unsatisfied

- c. Why weren't you satisfied with the PrintSTEP documents?

Difficult to follow/understand  
WEREN'T WRITTEN IN YOUR PRIMARY LANGUAGE  
OTHER (SPECIFY)

SKIP TO Q4

- d. Why not?

DIDN'T KNOW THERE WERE ANY

DIDN'T HAVE THE INFORMATION I NEEDED  
COULDN'T GET A COPY  
OTHER (specify)

4. Did you use the PrintSTEP Information Repository during any part of the regulatory process?

YES

NO - SKIP TO Q4d

- a. Which Repository location did you use?

INTERNET

LIBRARY

STATE/CITY OFFICE

- b. How satisfied were you with the information available in the Information Repository?  
Were you...

Very satisfied - SKIP TO Q5

Somewhat satisfied - SKIP TO Q5

Somewhat unsatisfied, or

Very unsatisfied

- c. Why weren't you satisfied with the information available in the Information Repository ?

DIFFICULT TO ACCESS

TOO FAR TO TRAVEL

DIFFICULT TO FIND WHAT I NEEDED

OTHER (SPECIFY)

SKIP TO Q5

- d. Why not?

DIDN'T NEED IT

OBTAINED INFORMATION ELSEWHERE

DIDN'T KNOW ABOUT IT

DIDN'T HAVE TIME/TOO BUSY

OTHER (specify)

5. In the past year, have you obtained environmental regulatory information from any other source?

YES

NO - SKIP TO Q6

- a. What other source was this?

- b. How satisfied were you with the information obtained from *(name of other source)*?  
Would you say you were....
- Very satisfied - SKIP TO Q6  
Somewhat satisfied - SKIP TO Q6  
Somewhat unsatisfied, or  
Very unsatisfied
- c. Why weren't you satisfied with the information obtained from *(name of other source)*
- NOT ENOUGH USEFUL INFORMATION THERE  
STAFF NOT KNOWLEDGEABLE ABOUT MY QUESTION  
OTHER (SPECIFY)
6. In the past year, have you been involved in any type of outreach or public involvement activity related to your environmental activities?  
YES  
NO - SKIP TO Q7
- a. What type of community outreach were you involved with related to your facility's environmental activities?
- Direct mailing  
To whom?  
Newspaper notice  
Posting signs  
Hosting or attending an open house  
Hosting or attending a public meeting  
Hearings of conservation commission or health board  
City council meetings  
Some other type of community outreach
- b. In general, how useful do you think these community outreach efforts were?
- Very useful  
Somewhat useful  
Not very useful, or  
Not useful at all

**If the facility did NOT have a PUBLIC MEETING, per Q6, SKIP to Q10**

7. Before you held your public meeting, did you provide public notice of the meeting?
- YES  
NO - SKIP TO 8

- a. In providing public notice, did you use:
- Direct mailing
  - Telephone contact
  - Newspaper notice or advertisement
  - Posted signs
  - Internet notice
  - In person or word-of-mouth
  - Any other type of notice (SPECIFY)
8. How useful was the (first/follow-up) public meeting as a way to learn about community concerns and expectations? Would you say it was...
- Very useful
  - Somewhat useful
  - Not very useful, or
  - Not useful at all
9. What would have made the (first/follow-up) public meeting more useful? (MULTIPLE RESPONSES)
- GREATER COMMUNITY ATTENDANCE
  - PARTICIPATION OF STATE AGENCY STAFF
  - COMMUNITY INVOLVEMENT PLAN DEVELOPED
  - OTHER (SPECIFY)
10. The PrintSTEP program is designed to provide opportunities for people to get involved by inviting comments on printer's application and making program information readily available to the public. For the PrintSTEP Program as a whole, there was limited interest from the public. Why do you think community members did not participate in the PrintSTEP process?
11. I'm going to read of list of possible outcomes of the PrintSTEP public involvement activities. For each one, please tell me if it was an outcome of your own involvement in PrintSTEP since you joined the program. (YES or NO)
- Your facility's compliance has improved
  - You are more comfortable contacting the state agency for help
  - Your facility has used new or different approaches to address environmental problems
  - The schedule for your PrintSTEP Agreement or Notification was shortened compared to the time it used to take under the standard permitting process
  - The schedule for your PrintSTEP Agreement or Notification was lengthened compared to the time it used to take under the standard permitting process
  - Your facility now reviews the chemical content of purchased materials more closely
  - Other?

12. What effect did the multi-media (i.e., air + water + waste) coordination at the state agency have on the regulatory process? Did it usually....

Speed up the process  
Slow down the process  
Sometimes speed it up and other times slow it down  
Have no effect at all

13. We would like to get a sense of printers' perception of your environmental regulatory requirements. For each area that I read, please tell me whether you would rate your own understanding as very good, good, fair or poor. How would you rate your understanding of the (READ ITEM)? [Repeat for pre-PrintSTEP understanding.]

	VERY GOOD	GOOD	FAIR	POOR
Air regulatory program and associated requirements	4	3	2	1
Storm Water regulatory program and associated requirements	4	3	2	1
Waste Water regulatory program and associated requirements	4	3	2	1
Hazardous Waste regulatory program and associated requirements	4	3	2	1

14. FOR EACH ITEM RESPONDENT ANSWERED FAIR OR POOR IN Q13 ABOVE, ASK:

- What about the (air/storm water/waste water/ hazardous waste) regulatory program or requirements do you find difficult to understand?

TOO COMPLICATED  
LACK OF EASY-TO-READ INFORMATION  
NO TIME TO LEARN  
HARD TO GET INFORMATION FROM GOVERNMENT STAFF  
OTHER (SPECIFY)

15. Has an environmental requirement affected your company's ability to respond to a business opportunity during the course of PrintSTEP? For example, installing a new piece of equipment; meeting the request of a customer or potential customer for a different ink, coating, etc.; increasing production; or bringing out-sourced operations in-house?

YES  
NO - SKIP TO Q16  
Don't know

- a. Can you describe a recent time this happened?
- b. How big an impact did this have on your company's profitability or growth opportunity? Would you say it was...



- i. A slight impact
- ii. A moderate impact
- iii. A serious impact or
- iv. A severe impact

16. Since joining PrintSTEP, has the time your facility spends on **record keeping** related to environmental requirements, filings, permits, and process/facility modifications, increased, decreased, or remained the same?

INCREASED

DECREASED

REMAINED THE SAME - SKIP to Q17

a. By how much (as a percentage)?

b. What caused this change?

17. Since joining PrintSTEP, has the time your facility spends on **reporting** related to environmental requirements, filings, permits, and process/facility modifications, increased, decreased, or remained the same?

INCREASED

DECREASED

REMAINED THE SAME - SKIP TO Q18

a. By how much (as a percentage)?

b. What caused this change?

18. What benefits do you see from your involvement in PrintSTEP?

19. What drawbacks do you see from your involvement in PrintSTEP?

20. What recommendations do you have for program improvements?

21. Overall, how satisfied are you with the PrintSTEP process?

Very satisfied

Somewhat satisfied

Somewhat unsatisfied, or

Very unsatisfied.

**CLOSING:** Those are all my questions. Thank you very much for your time.

# **Appendix C: Sample PrintSTEP Application**

# PrintSTEP Application

## 1. Background Information

Reporting year:		
This is a ( <i>circle one</i> ): Initial PrintSTEP Application		or Annual PrintSTEP Renewal
Your Name:		Phone:
Facility Name:		Fax:
Street Address:		E-mail:
City:		
Number of Employees:	Full Time=	Part time=

## 2. Type of Printing Operations

TYPE OF PRINTING PROCESSES YOU USE	Check all that apply	If you have multiple processes, estimate the percentage of production from each process*:
Sheetfed Lithography		
Non-heatset Web Lithography		
Heatset Web Lithography		
Flexography		
Screenprinting		
Gravure		
Digital Impressions		

## 3. Waste Water Information

Refer to Chapter 3 in <i>Plain Language Workbook</i> .		Yes	No
Do you discharge any wastewater to a septic system?			
If so, what do you discharge? _____			
Do you discharge industrial wastewater to a sewer district?			
If yes, what do you discharge? _____			
Do you have an authorization letter or permit from your POTW?			
Do you discharge wastewater directly to surface water?			
If so, what do you discharge? _____			
Do you have an NPDES permit for this discharge?			
If you have a wastewater permit or authorization letter, complete the following information:			
Date Permit Obtained		Permitting Authority:	
Expiration Date:		Permit Number:	
Estimate the amount of waste water discharged over the last 12 mos.			

#### 4. Storm Water Information

Refer to Chapter 4 in the *Workbook*.

	Yes	No
Do your facility meet the “no-exposure” status for wastewater as determined by the checklist on Page X of Chapter 4 in the Workbook?		
<i>Please attach a copy of your checklist.</i>		

#### 5. Hazardous Waste Generation

Refer to Chapter 5 in the *Workbook*.

Do you have an EPA ID Number for hazardous waste generation? If so, what is it? _____	
<b>What is your RCRA generator status?</b>	<b>Check One:</b>
No hazardous waste generated	
Status is Unknown	
Small Quantity Generator (SQG)	
Full Quantity Generator (FQG) <1000kg/month, or 2200#/month	
Full Quantity Generator (FQG) >1000kg/month, or 2200#/month	
If you are a SQG, have you submitted your self-certification declaration, fee and Corrective Action Plan, if necessary, by applicable deadline (1/04, 1/05, 1/06)?	<b>Y or N</b>
If you are a FQG, have you or a staff person at your facility completed the required annual coordinator training and certification and renewed it annually?	<b>Y or N</b>

*List all industrial wastes generated during the past 12 months; attach additional sheets if necessary.*

Name of the Waste	Waste Type*	Process or Activity Generating Waste	Amount Generated (lbs or gal)

- If the waste is a listed hazardous waste, enter the RCRA waste code (such as D001), otherwise enter the RCRA characteristic ignitable, corrosive, reactive, or toxic.

#### 6. Air Emissions

Refer to Chapter 6,7, and 8 in the *Workbook*.

What is your VOC Air Level, calculated from Chapter 6?					
<i>circle one:</i>	1	2	3	4	5
Are you below de minimus levels for each RTAP you use? (see Chapter 7 in the workbook). Yes or No?					
If YES: proceed to next section.		or	If NO: contact NH DES Air Resources Division.		

## 7. Public Involvement

Refer to Chapter 11 in the *Workbook*.

How has your facility interacted with your community and immediate neighbors in the past year regarding environmental concerns? (Refer to Chapter 11 in the <i>Workbook</i> )	Check all that apply
Open House	
Mailings – advertising	
Mailings - non-advertising	
Discussions with Community leaders	
Public Meeting	
No Activity	

## 8. Technical Assistance

Refer to Appendix A in the *Workbook*.

As a PrintSTEP participant, you will have access to free technical assistance. These specialists can help you with pollution prevention, environmental compliance, or any questions on PrintSTEP. A list of technical assistance contacts is provided in Appendix A. Check here if you would like a technical assistance specialist to contact you: ☐ Please list any areas you particularly would like assistance with.

---

---

---

---

## 9. Production or Activity Indicator

You will report a single number without units. Only you will know the derivation of this number (be it square feet printed, sales, labor hours, etc.). You will keep that information on file for use again in the next reporting cycle, when the next year's number will be compared to the last year's number to see how it has changed.

Please turn to page X for an explanation and directions.

What is your production or activity indicator? \_\_\_\_\_

### Directions for Completing Question #9: Productivity Indicator.

EPA is collecting environmental impact data on this application in order to evaluate the overall pilot PrintSTEP program, which is being carried out in three states. In order to accurately account for changes in environmental emissions or waste during the course of the PrintSTEP program, EPA must be able to determine if a change in emissions/waste is the result of a change in environmental management practices, or if the change is due to increasing or decreasing production. To make this determination possible, facilities must provide: 1) an indicator of current year production; OR 2) an indicator for level of activity based on a variable other than production that is the primary influence on the quantity of material your facility recycles, treats or releases. You may report a number reflecting either production or activity.

While several methods are available for determining this data element, *the production or activity indicator must be based on the variable that most directly affects the quantities of material recycled, treated or released.* Examples of indicators available include the following:

- Square feet of substrate printed this year;
- Number of impressions made this year;
- Total annual sales this year;
- Total annual labor hours this year;
- A different method that you select.

**Example 1, using sales:**

You determine that annual sales is the best indicator of the quantity of material your facility recycles, treats or releases. Your total annual sales were \$500,000 in 2000. You could report an activity indicator of 5.0; 500,000; or something similar that reflects sales but does not include units.

**Example 2, using number of impressions:**

The variable that most closely reflects the quantity of material the facility recycles, treats or releases is number of impressions, since most of those impressions are similar in terms of size, substrate, and complexity. If your total number of impressions was 104,000 in the current reporting year, you could report a production indicator of 104.

## 10. Pollution Prevention Information

Refer to Chapter 2 and Appendix B in the *Workbook*.

<b>Pollution Prevention Practice</b> For new PrintSTEP applicants, answer: Have you ever...? For annual renewal of PrintSTEP, answer: Over the last year, have you?	Check the appropriate column:				
	Yes	No	Investigating	Don't Know	N/A
<b><u>PREPRESS</u></b>					
Eliminated chrome based cleaners?					
Installed and properly maintained silver recovery units?					
Used developer and fixer recycling units for film processors?					
Used low replenishing rate film chemistry?					
Used recycling units for film and plate processor washwater?					
Used digital, dry, or water-based proofing systems?					
<b><u>PRINTING</u></b>					
Used first-in-first-out inventory system to reduce waste ink disposal costs?					
Switched to low VOC ink systems (e.g., UV curable, water or vegetable-based technology)					
Used stay open inks or cartridge ink delivery system?					
Where possible, used low solvent, or water-based ink jet inks?					
Used chiller re-circulators to reduce evaporation and lower air emissions?					
Switched to isopropyl alcohol free fountain solutions or reduced concentration of isopropyl alcohol in fountain solution?					

<b>Pollution Prevention Practice</b> For new PrintSTEP applicants, answer: Have you ever...? For annual renewal of PrintSTEP, answer: Over the last year, have you?	Check the appropriate column:				
	Yes	No	Investigating	Don't Know	N/A
Installed filtration system for fountain solution re-circulation system?					
<b><u>POST-PRESS/ CLEANING/WIPES</u></b>					
Switched to low vapor pressure or low VOC cleaning solvents (less than 10 mm Hg) to reduce air emissions and solvent use?					
Replaced hazardous solvents with non-hazardous or less hazardous solvents?					
Instituted a solvent recycling/reuse system?					
Stored soiled wipes in closed or covered containers to reduce air emissions?					
Recover free liquids from shop towels (i.e., gravity draining, wringers, centrifuges, etc.)?					
Where possible, used low solvent, no solvent-based, or water-based adhesives and glues?					
<b><u>REUSE/ RECYCLING</u></b>					
Implemented a solid waste/recycling program to recycle all possible items from your solid waste stream?					
Reused and recycled pallets and skids to reduce solid waste?					
Collected and recycled used oil, other lubricants, and batteries?					
Recycled parts washing fluids?					
Properly Recycled or disposed of spent fluorescent and HID lamps?					
Requested vendor take back all samples not consumed?					
<b><u>HOUSEKEEPING</u></b>					
Covered all open containers of liquids and keep them closed?					
Stored all materials to minimize damage due to mishandling or accidents?					

**Confidential Business Information (CBI) Notice:**

EPA's regulations on confidential business information (CBI) are found in 40 CFR Part 2, Subpart B. (A copy is available, upon request, from your State PrintSTEP coordinator.) Please identify any information that you claim is confidential business information. If you make a confidentiality claim, and if EPA determines that the information you designated meets the CBI criteria in 40 CFR Section 2.208, we will disclose the information only to the extent, and by means of the procedures, specified in 40 CFR Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA, it may be made available to the public without further notice to the business.

**Signature of PrintSTEP Applicant:** \_\_\_\_\_

**Printed Name:** \_\_\_\_\_

Message

---

**From:** Dravis, Samantha [dravis.samantha@epa.gov]  
**Sent:** 8/4/2017 3:36:37 PM  
**To:** Greaves, Holly [greaves.holly@epa.gov]  
**CC:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** Re: State request for EJ Guidance

That looks fine to me

Sent from my iPad

On Aug 4, 2017, at 10:51 AM, Greaves, Holly <greaves.holly@epa.gov> wrote:

Sam/Brittany,

The state of California is asking for a response regarding our plans for environmental justice, given that it is proposed for elimination in the FY 2018 budget and the NPM guidance from OECA was silent as to EJ planned activities.

Would you be ok with my staff providing the following response to the state of California?

Deliberative Process / Ex. 5

**Deliberative Process / Ex. 5**

**Deliberative Process / Ex. 5**

Thanks,  
Holly

---

**From:** Greenblott, Joseph  
**Sent:** Thursday, August 3, 2017 5:47 PM  
**To:** Greaves, Holly <greaves.holly@epa.gov>  
**Cc:** Burchard, Beth <Burchard.Beth@epa.gov>; OBrien, Kathy <Obrien.Kathy@epa.gov>; Budd, Blair (Kathryn) <budd.kathryn@epa.gov>  
**Subject:** State request for EJ Guidance

Hi Holly,

OECA has yet to hear from OP on how to respond to the request from California (Grant Copeland) on whether the agency was planning on providing additional guidance to EPA regions on Environmental Justice.

To facilitate drafting written response to the comment,

**Deliberative Process / Ex. 5**

**Deliberative Process / Ex. 5**



# Deliberative Process / Ex. 5

As you recall from Larry's email, "OECA had provided [in OECA's NPM Guidance documents] guidance to the Regions on expectations for EJ work, and the State noticed the absence of any such guidance this year. They asked if the Agency planned in the future to issue guidance to the Regions and States on EJ work, and [Larry] said that [he] thought we would (presumably from OP)."

Note that OP does not develop NPM Guidances.

Thanks,

Joe

\*Language in FY 2018 CJ:

**"FY 2018 Activities and Performance Plan:**

*Resources and FTE have been eliminated for this program in FY2018. EJ work impacting the entire agency will be incorporated into future policy work within the Integrated Environmental Strategy program, which is a part of the EPA's Office of the Administrator."*

---

**From:** Chavez, Kimberly  
**Sent:** Thursday, August 03, 2017 1:36 PM  
**To:** Burchard, Beth <[Burchard.Beth@epa.gov](mailto:Burchard.Beth@epa.gov)>  
**Subject:** FW: Alert to OP on state request for EJ Guidance

Hi Beth,

I have yet to hear back from the two OP contacts in my message below. Do you have contacts in OP that can help with the state comment on the ECOS call regarding EJ guidance?

Thanks,

*Kim Chavez*

Office of Compliance  
202-564-4298

---

**From:** Chavez, Kimberly  
**Sent:** Tuesday, August 01, 2017 2:03 PM  
**To:** Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>  
**Cc:** McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>  
**Subject:** FW: Alert to OP on state request for EJ Guidance

Hi Brittany and Samantha,

OECA is beginning the process of drafting responses to comments for the FY 2018-2019 NPM Guidance. Holly informed me that both of you were notified of the comment made by the state of California

regarding guidance to the Regions and States on EJ work. As EJ is transitioning from OECA to OP, the OECA Acting AA recommended that OP take the lead on messaging regarding future EJ work.

Thanks,

*Kim Chavez*

Office of Compliance

202-564-4298

---

**From:** Greaves, Holly  
**Sent:** Tuesday, August 01, 2017 1:52 PM  
**To:** Chavez, Kimberly <[Chavez.Kimberly@epa.gov](mailto:Chavez.Kimberly@epa.gov)>  
**Cc:** McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>  
**Subject:** RE: Alert to OP on state request for EJ Guidance

Hi Kimberly, I wasn't aware a formal response was needed. I did notify Brittany Bolen and Samantha Dravis that California raised this issue.

Thanks,  
Holly

---

**From:** Chavez, Kimberly  
**Sent:** Tuesday, August 1, 2017 12:26 PM  
**To:** Greaves, Holly <[greaves.holly@epa.gov](mailto:greaves.holly@epa.gov)>  
**Cc:** McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>  
**Subject:** FW: Alert to OP on state request for EJ Guidance

Hi Holly,

Can you please let me know the status of the EJ issue discussed below? Who are the contacts you notified in OP? I will need to coordinate with them to include a response within OECA's Response to Comments document.

Thanks,

*Kim Chavez*

Office of Compliance

202-564-4298

---

**From:** Starfield, Lawrence  
**Sent:** Friday, July 14, 2017 1:44 PM  
**To:** OBrien, Kathy <[Obrien.Kathy@epa.gov](mailto:Obrien.Kathy@epa.gov)>; Greaves, Holly <[greaves.holly@epa.gov](mailto:greaves.holly@epa.gov)>; Greenblott, Joseph <[Greenblott.Joseph@epa.gov](mailto:Greenblott.Joseph@epa.gov)>  
**Cc:** Bloom, David <[Bloom.David@epa.gov](mailto:Bloom.David@epa.gov)>; Osborne, Howard <[Osborne.Howard@epa.gov](mailto:Osborne.Howard@epa.gov)>; Burchard, Beth <[Burchard.Beth@epa.gov](mailto:Burchard.Beth@epa.gov)>; McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>; Chavez, Kimberly <[Chavez.Kimberly@epa.gov](mailto:Chavez.Kimberly@epa.gov)>; Kocian, Aaron <[kocian.aaron@epa.gov](mailto:kocian.aaron@epa.gov)>  
**Subject:** RE: Alert to OP on state request for EJ Guidance

Holly,

I would add that in past NPM Guidance documents, OECA had provided guidance to the Regions on expectations for EJ work, and the State noticed the absence of any such guidance this year. They asked if the Agency planned in the future to issue guidance to the Regions and States on EJ work, and I said that I thought we would (presumably from OP).

Larry

This message is CONFIDENTIAL, and may contain legally privileged information. If you are not the intended recipient, or believe you received this communication in error, please delete it immediately, do not copy, and notify the sender. Thank you.

---

**From:** OBrien, Kathy  
**Sent:** Friday, July 14, 2017 1:16 PM  
**To:** Greaves, Holly <[greaves.holly@epa.gov](mailto:greaves.holly@epa.gov)>; Greenblott, Joseph <[Greenblott.Joseph@epa.gov](mailto:Greenblott.Joseph@epa.gov)>  
**Cc:** Starfield, Lawrence <[Starfield.Lawrence@epa.gov](mailto:Starfield.Lawrence@epa.gov)>; Bloom, David <[Bloom.David@epa.gov](mailto:Bloom.David@epa.gov)>; Osborne, Howard <[Osborne.Howard@epa.gov](mailto:Osborne.Howard@epa.gov)>; Burchard, Beth <[Burchard.Beth@epa.gov](mailto:Burchard.Beth@epa.gov)>; McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>; Chavez, Kimberly <[Chavez.Kimberly@epa.gov](mailto:Chavez.Kimberly@epa.gov)>; Kocian, Aaron <[kocian.aaron@epa.gov](mailto:kocian.aaron@epa.gov)>; OBrien, Kathy <[Obrien.Kathy@epa.gov](mailto:Obrien.Kathy@epa.gov)>  
**Subject:** RE: Alert to OP on state request for EJ Guidance

Holly, the request was made by California (Grant Copeland, based on my notes).

---

**From:** Greaves, Holly  
**Sent:** Friday, July 14, 2017 12:57 PM  
**To:** Greenblott, Joseph <[Greenblott.Joseph@epa.gov](mailto:Greenblott.Joseph@epa.gov)>  
**Cc:** Starfield, Lawrence <[Starfield.Lawrence@epa.gov](mailto:Starfield.Lawrence@epa.gov)>; OBrien, Kathy <[Obrien.Kathy@epa.gov](mailto:Obrien.Kathy@epa.gov)>; Bloom, David <[Bloom.David@epa.gov](mailto:Bloom.David@epa.gov)>; Osborne, Howard <[Osborne.Howard@epa.gov](mailto:Osborne.Howard@epa.gov)>; Burchard, Beth <[Burchard.Beth@epa.gov](mailto:Burchard.Beth@epa.gov)>; McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>; Chavez, Kimberly <[Chavez.Kimberly@epa.gov](mailto:Chavez.Kimberly@epa.gov)>; Kocian, Aaron <[kocian.aaron@epa.gov](mailto:kocian.aaron@epa.gov)>  
**Subject:** RE: Alert to OP on state request for EJ Guidance

Hi Joe,

Would you mind to share which state made this request, and let me know the type of response they are looking for from OP (formally or informally) at this time? I know we elected to make the NPM guidance consistent with the President's Budget, but we do need to keep in mind that Congress still has to act.

Thanks,  
Holly

---

**From:** Greenblott, Joseph  
**Sent:** Thursday, July 13, 2017 4:46 PM  
**To:** Greaves, Holly <[greaves.holly@epa.gov](mailto:greaves.holly@epa.gov)>  
**Cc:** Starfield, Lawrence <[Starfield.Lawrence@epa.gov](mailto:Starfield.Lawrence@epa.gov)>; OBrien, Kathy <[Obrien.Kathy@epa.gov](mailto:Obrien.Kathy@epa.gov)>; Bloom, David <[Bloom.David@epa.gov](mailto:Bloom.David@epa.gov)>; Osborne, Howard <[Osborne.Howard@epa.gov](mailto:Osborne.Howard@epa.gov)>; Burchard, Beth <[Burchard.Beth@epa.gov](mailto:Burchard.Beth@epa.gov)>; McKeever, Michele <[McKeever.Michele@epa.gov](mailto:McKeever.Michele@epa.gov)>; Chavez, Kimberly <[Chavez.Kimberly@epa.gov](mailto:Chavez.Kimberly@epa.gov)>; Kocian, Aaron <[kocian.aaron@epa.gov](mailto:kocian.aaron@epa.gov)>  
**Subject:** Alert to OP on state request for EJ Guidance

Hi Holly,

Would you please let the appropriate people in the Office of Policy know that a state participant during today's NPM-state conference call on OECA's NPM Guidance asked if the agency was planning on providing **additional guidance to EPA regions on Environmental Justice**.

As EJ is transitioning from OECA to OP, Larry Starfield (copied) asked us to alert OP of this request.

Thanks,

Joe

Dr. Joseph M. Greenblott  
Associate Director, Analysis Division  
Office of Planning, Analysis and Accountability  
Office of the Chief Financial Officer  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W. (2722A)  
Washington, DC 20460

Tel: 202-564-4250

Fax: 202-564-1808

Message

---

**From:** Zarba, Christopher [Zarba.Christopher@epa.gov]  
**Sent:** 4/12/2017 5:30:06 PM  
**To:** Jackson, Ryan [jackson.ryan@epa.gov]  
**CC:** Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Carpenter, Thomas [Carpenter.Thomas@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Reeder, John [Reeder.John@epa.gov]  
**Subject:** RE: SAB  
**Attachments:** SAB and CASAC projects 040122017 .pdf; Ethics evaluation SAB CASAC-ss.docx; Bloomberg BNA August 2015.pdf; Outreach Plan SAB CASAC FY18 signed-final.pdf

Ryan,

This email contains follow up materials I agreed to provide you in response to our meeting on Monday afternoon. I also am including additional text (item #3) on some of the issues we face when working to maximize diversity on all of our panels. Hopefully, this will help facilitate anticipated future discussions on how to improve diversity on committees and panels.

- 1) Ethics - As we discussed the SAB and CASAC ethics criteria are the same for all science FACs across the federal government. We follow these rules meticulously with a no exception policy and frequently consult with the EPA ethics office when ever faced with a questionable decision. A fact sheet of the criteria the SAB Staff office must use to make ethics determinations is attached.
- 2) A list of completed (since 2011), current and upcoming reviews for the SAB and CASAC is attached.
- 3) In your email to me you provided several attachments that focused on the geographic diversity. We look forward to working with you in the days ahead to ensure the SAB & CASAC are as diverse as possible. When we have those discussions here are some of the key points we have learned and have had to deal with in our efforts to maximize diversity.
  - a. We have always placed a high priority on diversity. In seeking diversity for the CASAC, SAB and SAB Standing Committees, we follow the Agency's Federal Advisory Committee Outreach Plan. A draft of this year's Outreach Plan is attached and summarizes our planned outreach efforts, which includes soliciting nominations from over 200 organizations, including professional associations, state and tribal associations, nongovernmental associations, stakeholder/industry associations, minority-serving academic institutions, and the EPA Environmental Justice List Serve,
  - b. The majority (two-thirds) of FACs administered by EPA are representative or policy committees, rather than scientific advisory committees. Representative or policy committees members represent the policy views of stakeholder groups, including state/local/tribal governments; environmental and public interest groups; trade associations; and industries. By contrast selection criteria for scientific FACs, such as the SAB and CASAC focus on scientific credentials and how those credentials align with planned or anticipated review needs.
  - c. Selection criteria for membership includes: demonstrated scientific credentials and disciplinary expertise in relevant fields; willingness to commit time to the committee and demonstrated ability to work constructively and effectively on committees; background and experiences that would help members contribute to the diversity of perspectives on the committee , ethics review, geography, racial, and ethnic diversity.
  - d. The scientific pool of expertise is not evenly distributed geographically or across sectors. States with large populations, many academic institutions and many large industries provide a much greater percentage of the candidates. In addition, academia and industry poses the vast majority of the needed expertise with state, local, tribal, and environmental organizations frequently only representing a small percentage of the pool. SABSO is working with FACMD and others to increase notification of our

solicitation to solicit scientists from States, Tribes, Local government and other non-governmental organizations.

The attached article provides an analysis (charts) on sector diversity. I provided the author of the article the charts used in the article several years ago. It also contains interviews with state scientists on the unique challenges they face when serving on the CASAC and SAB (page 5). I believe that this partially explains why state, local and tribal scientists typically represent a small percentage of applicants.

That is it for now. Thanks again for your help and support.

*Christopher S. Zarba*

**US EPA Science Advisory Board**

zarba.christopher@epa.gov

O (202) 564-0760

M: **Ex. 6**

---

**From:** Jackson, Ryan

**Sent:** Monday, April 10, 2017 9:16 PM

**To:** Zarba, Christopher <Zarba.Christopher@epa.gov>

**Cc:** Bolen, Brittany <bolen.brittany@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>

**Subject:** SAB

Chris, per our conversation this morning, please proceed with starting to draft the FR for the solicitation for SAB candidates.

Of course, I will help with identifying those with expertise to help contribute to our agenda.

To also follow up on our conversation, the attached are examples used in this previous Congress of lack of geographic diversity on the SAB from states and state government participants.

I'm hoping to work with you to ensure that we get a good cross section of individuals on the SAB.

Thanks again for your time today, and again very impressive moose.

Ryan.

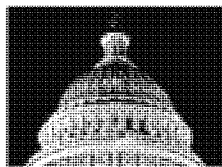
Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

**Ex. 6**

Source: Daily Environment Report: News Archive > 2015 > August > 08/12/2015 > Special Report > Science Policy: Bill Report Tells EPA to Suspend Advisers' Activities

**155 DEN B-1**
**Science Policy**
**Bill Report Tells EPA to Suspend Advisers' Activities**

*By Pat Rizzuto*

Aug. 11 — All reviews conducted by the Environmental Protection Agency's Science Advisory Board would have to be suspended under language included in the House report accompanying the agency's fiscal year 2016 appropriations.

The report directs the EPA's Science Advisory Board (SAB) to develop a variety of draft policies, including one to secure that 10 percent of its members work as state or tribal scientists, and to submit them to the National Academies of Sciences, Engineering and Medicine before the suspension can be lifted. The SAB is the primary forum through which the agency's proposed research, draft scientific assessments and preliminary conclusions—including those that underlie regulatory decisions—are critiqued by nonagency scientists, economists and other experts.

The House Committee on Appropriations report directs the EPA to halt the board's advisory activities until the agency drafts and submits to the National Academies one or more policies addressing topics detailed in the report.

"EPA shall suspend all current and planned SAB reviews until such documents have been provided to the academy for review," the House said in House Report No. 114-170.

The board is the umbrella name for more than a dozen subcommittees that, in recent years, have reviewed draft agency documents including the "Connectivity of Streams and Wetlands to Downstream Waters" report, a proposed approach to examining impacts of hydraulic fracturing on drinking water resources, and efforts the EPA is making to use computer modeling, high-throughput screens and other emerging toxicity testing methods to evaluate chemicals.

**Specific Policies the Academies Would Review**

The EPA is to draft policies describing how the advisory board will:

- ensure the quality and integrity of its scientific review process,
- convene advisory panels with at least 10 percent of the members being state and tribal scientists; and
- respond to public comments made during the board's reviews.

The EPA would have to develop an additional policy if it decides to specify financial information it could use to identify conflicts of interest or bias, the report said. In that case, the policy must address possible conflicts arising from former or current federal grants a scientist has received and public statements he or she has made, the report said.

The EPA is to submit the draft policy or policies to the National Academies for review. The academies are directed to certify to the appropriations committee that the agency's proposed policies would provide a clear, credible, objective framework under which the board would operate. The policies also must provide consistent conflict-of-interest rules and an appropriate balance of membership within SAB's advisory committees, the report said.

**House Language Stands Absent Senate Objection**

The report accompanies H.R. 2822, which would provide the EPA with \$7.43 billion in FY 2016. That allocation would be 13 percent less than President Barack Obama requested and almost 9 percent less than the EPA's current funding levels.

The House has not voted on the bill, but the appropriations committee approved the bill and accompanying report June 18 (118 DEN A-1, 6/19/15).

The Senate report that accompanies its appropriations bill (S. 1645) does not have any language requiring the SAB to suspend its activities or develop specific policies.

**BNA Snapshot**
**EPA's Science Advisory Board, State Scientists**

**Key Developments:** All reviews conducted by the EPA Science Advisory Board would be suspended under language included in the House report that accompanies the agency's fiscal year 2016 appropriations.

The EPA would have to develop policies including one to secure that 10 percent of SAB's members work as state or tribal scientists.

**What's Next:** Unless the Senate specifically objects to the House report language during the chambers' conference on the appropriations bills, the House requirement would stand.

***"Another example of Republican efforts to derail, discredit, and slow EPA actions that go against the interests of big industry polluters."***

***Rep. Eddie Bernice Johnson  
(D-Texas)***

Unless the Senate specifically objects to the House language and the SAB suspension is repealed in the conference report that would accompany the final funding bill, the House language stands, David Goldston told Bloomberg BNA. Goldston served retired Rep. Sherwood "Sherry" Boehlert (R-N.Y.) as chief of staff of the House Committee on Science from 2001 through 2006, and he now directs government affairs for the Natural Resources Defense Council.

"It [the report language] can't be enforced the way law is, but you ignore appropriators' instructions at your peril," Goldston said.

#### **'Thinly Veiled Attempt to Weaken EPA.'**

Rep. Eddie Bernice Johnson (D-Texas), ranking member of the House Science, Space and Technology Committee, told Bloomberg BNA by e-mail that ensuring transparency and balance in the selection of members of EPA's Science Advisory Board is worthwhile.

"That being said, this provision in the House Interior Appropriations bill is just another example of Republican efforts to derail, discredit, and slow EPA actions that go against the interests of big industry polluters," Johnson said.

"These provisions represent a thinly veiled attempt to weaken the credibility of EPA's actions by undermining the agency's scientific review process," she said.

The report language would create unnecessary hurdles that would delay the board's scientific advice, and ultimately EPA action, to protect the health and safety of every American, Johnson said.

Gina Solomon, deputy secretary for science and health at California's Environmental Protection Agency and a member of the agency's main, or "chartered," SAB, used similar language in her e-mail to Bloomberg BNA.

"The requirement to suspend the SAB's work while EPA develops a new set of policies and procedures and then wait two years to have them reviewed by the National Academy is a thinly veiled attempt to stop EPA's science-based policies from moving forward," Solomon said.

#### **Policy 'Change' Said to Be EPA's Practice**

"The House report reflects a lack of understanding of EPA's current practice. The SAB already has policies and procedures related to scientific quality and integrity, and the current process already includes an evaluation of potential bias," Solomon said.

All SAB members must currently provide information about all sources of funding, including grants, as well as public statements and positions relevant to any issue that is being discussed, she said.

These declarations are filed annually and are then updated by each SAB member prior to each meeting, relevant to the specific topic or topics of that meeting, Solomon continued.

"The policy 'change' that the House report is calling for isn't a change at all—it's EPA's current practice," Solomon said.

Goldston said "the report is written by a faction of the GOP that wants to eliminate EPA altogether."

This faction is striving to accomplish its goal through a back door requirement that, essentially, places a requirement on the agency, but deprives the Congress and the public of a full, open debate on the matter, he said.

If the language were included in a bill, the president could veto the bill, Goldston said.

#### **Procedure Makes Removal More Difficult**

Tucking the requirement into a report that accompanies a much broader bill funding multiple agencies increases the likelihood that the provision will not be removed or objected to during the legislators' conference, he said.

The NRDC does not share the committee's premise that there is something fundamentally wrong with the Science Advisory Board, but it does not object to a requirement for a National Academies review of SAB's policies, he said.

There could be merit in discussing and thereby obtaining greater clarity on issues, such as what the implication would be of guaranteeing that 10 percent of a scientific panel consisted of state and tribal scientists, he said.

Perspectives on what constitutes conflicts of interest and bias also can be debated, Goldston said.

Debating such topics makes sense, or at least an argument can be made for the value of debating those topics, Goldston said.

The report language short-circuits the congressional process, he said.

#### **Congressional Advocates Silent**



Bloomberg BNA unsuccessfully sought perspectives from congressional supporters of the report language. The House Appropriations Committee did not respond to questions.

A spokesman for Rep. Frank Lucas (R-Okla.) referred all questions to the House Appropriations Committee. Lucas introduced the EPA Science Advisory Board Reform Act of 2015 (H.R. 1029) in February (38 DEN A-6, 2/26/15).

Similar to the House report, Lucas' bill would have required that at least 10 percent of the board's members be state, local or tribal government scientists.

Unlike the House report, Lucas' bill would not have suspended all SAB activities.

The House approved Lucas' bill 236-181 on March 17 (52 DEN A-14, 3/18/15).

### **Former ORD Directors Weigh In**

A scientist and a risk assessor, each of whom served as head of the EPA's Office of Research and Development during the George W. Bush administration, offered insight into the impact suspending SAB would have. ORD does not oversee the Science Advisory Board, which is part of the EPA administrator's office, but much of the science and risk analysis work conducted by the ORD is reviewed by the board.

"Concern about the makeup of the SAB and its ad hoc panels is not new," said George Gray, director of the George Washington University Center for Risk Science and Public Health.

"Questions about disciplinary, geographic and sectoral (i.e., state, private sector, academic) balance and the issue of potential conflicts of interest have been around for a long time.

"EPA has policies about how all of these are addressed," said Gray who served as EPA's assistant administrator for research and development and a science advisor from 2005 to 2009.

"Perhaps reviewing and refining these policies and having them reviewed by academies would settle these long-standing issues," Gray said.

Paul Gilman, who served as EPA's assistant administrator for Research and Development and Science Advisor from 2002 until 2004, said the SAB had just revised its policies for membership when he arrived at the agency.

"They became the model for other federal agencies," said Gilman, who now is senior vice president and chief sustainability officer at Covanta, which owns and operates 45 energy-from-waste facilities around the world.

"Having said that, it is appropriate to scrutinize this sort of thing routinely. It is possible to analyze past membership to see if there is a systematic bias present. If there are Congressional concerns about bias, that is sufficient impetus for a review," Gilman said.

However, Gilman said, "I worry that putting all SAB activities in abeyance while that is happening could create significant delay in the outside-EPA third party review of some of the EPA's most important technical documents."

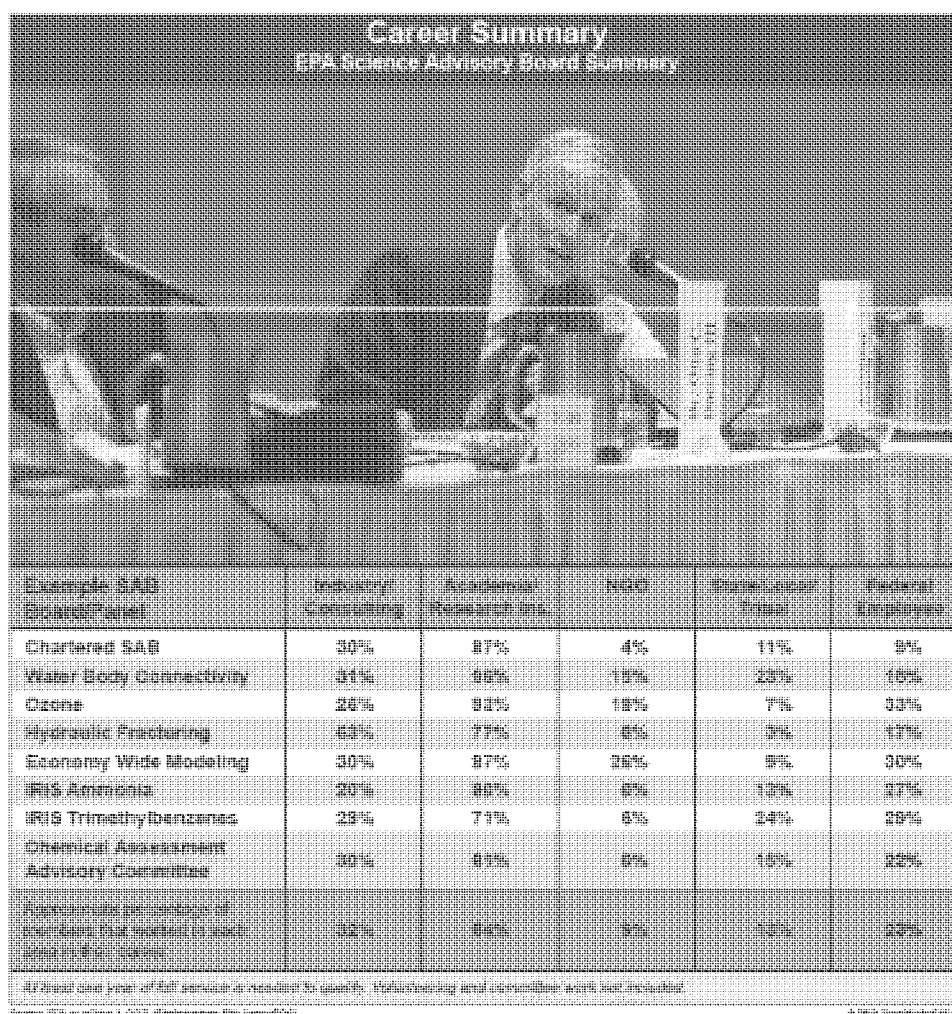
Gray echoed that sentiment.

Requiring all SAB activities be stopped until the revised policies are submitted to the academies would be disruptive, Gray said. The disruption, however, would provide a strong incentive for the agency to act quickly, he said.

Gilman said the academies has a fast-track mechanism to study issues that might minimize the delay in the SAB's work.

William Kearney, director of media relations for the National Academies, told Bloomberg BNA it is difficult to provide even a range of time and money for the requested review without more detail about what the House Appropriations Committee wants.

Committee consensus reports can take anywhere from roughly six months to two years and cost several hundred thousand dollars to more than a million dollars depending on their scope, Kearney said.



Faster methods are available, again, depending on the scope of the request and the outcome expected, Kearney said.

### Representative Versus Scientific

The appropriations committee's instructions to the EPA that it should ensure state and tribal scientists constitute at least 10 percent of the Science Advisory Board prompted wide-ranging comment among those interviewed by Bloomberg BNA.

The topic also spurred debate during a May 20 Senate subcommittee hearing on the EPA Science Advisory Board Reform Act of 2015 (S. 543) that also contains the 10 percent mandate (98 DEN A-16, 5/21/15)

The Senate bill has not moved since that hearing.

Christopher Zarba, director of the SAB staff office, told Bloomberg BNA the mandate would conflate the goals of two separate types of advisory committees that each provide valuable advice to the EPA.

The two types of committees are representative committees, which consist of individuals selected to reflect the views of the entity or group they represent, and scientific and technical committees, which consist of professionals selected for their particular expertise.

Of the 20 federal advisory committees that serve the EPA, 13 have representatives of groups or organizations, such as community groups, the business community, nongovernmental organizations, state and local governments and tribal governments, according to information the agency's Office of Administration and Resources Management provided Bloomberg BNA.

Examples include the Clean Air Act Advisory Committee, Local Government Advisory Committee, National Advisory Council for Environmental Policy and Technology, National Environmental Justice Advisory Council and Pesticide Program Dialogue Committee.

The remaining seven panels are scientific and technical advisory committees.

These include the Clean Air Scientific Advisory Committee, Board of Scientific Counselors, Science Advisory Board and the Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel.

"We love state and tribal scientists. They contribute greatly to our reviews and we use them at every opportunity. There just aren't that many to choose from," Zarba said.

"In a typical public solicitation, state and tribal scientists typically represent a few percent of the applicants. As a result if we receive 130 applicants there may only be three to five state and tribal scientists to consider. In some solicitations we only received 30 to 40 applicants and may have no state and tribal scientists to consider," he said.

Asked if he could provide a breakdown of the SAB's membership, Zarba provided Bloomberg BNA a chart that divided illustrative SAB committees into different organizations from which they came. The chart was originally prepared at the request of a member of Congress, he said.

Individuals were placed into various categories based not only on whether they were currently working in a specific position, working at a state agency for example, but whether they had worked in such an organization during their career, Zarba said.

Based on the SAB staff's calculations, about 13 percent of the committees' members represented state, local or tribal governments (see chart).

Sen. John Boozman (R-Ariz.), who introduced S. 543 and supports increasing state representation on SAB, disagreed with that approach to calculating how many state representatives served on the board.

"Counting all scientists who have performed such work at some point in their careers inflates the number. Many excellent scientists do perform work for the states. The intent of our bill is to ensure the states, which have a very important role to play in protecting our environment, are able to participate throughout the process," Boozman said in an e-mail response to questions.

### **State Participants' Perspectives**

Solomon, from CalEPA said, the 10 percent quota for state or tribal members on the SAB will be difficult to achieve without jeopardizing the board's ability to effectively exercise scientific oversight over the agency.

"The scientific issues that come before the board cover an enormous array of scientific disciplines and areas of expertise, so the top priority is for the board to have an appropriate array of experts who can evaluate EPA's work. States and tribes will rarely have true experts in some of the very technical areas of science that would be needed most of those experts are in academia," Solomon said.

It makes sense to have state and tribal participation—as the SAB already does—but the idea of specific quotas for state representation on a science panel is a bad one, she said.

Henry Anderson, chief medical officer for the Wisconsin Division of Public Health, who serves on an SAB committee, told Bloomberg BNA state scientists have a lot of practical expertise, which the SAB will make extra effort to seek out for some panels.

Most state scientists are generalists, however, not the specialists the SAB typically needs, Anderson said.

Serving on SAB committees also takes a lot of time for state scientists, Anderson and Solomon said.

"To get two or three days off in a row is hard for a state official," Anderson said.

Scheduling challenges have prevented him from serving on some committees, he added.

Solomon said she does as much of her SAB work as possible on her own time, so that her workday is focused on serving California's taxpayers.

"Using my own time, however, only works for reviewing documents and preparing comments. Traveling to meetings is another challenge. For example, I need to go through the process of obtaining out-of-state travel authorization from the governor's office when I go to D.C. for an EPA meeting," she said.

"I usually spend the plane flights, airport time, and evenings trying to stay caught up while I'm away, but I always come back to quite a backlog," Solomon said.

"I have found it to be very difficult to make the time to serve on EPA panels, and I'm one of the lucky ones since I'm in a state with a lot of other scientific staff, so I have colleagues who can help pick up the slack when I need to go to D.C.," she said.

### **State Legislators Voice Concerns**

The Council of State Governments West, however, is concerned that state scientists are insufficiently represented on SAB committees.

Council legislators representing Alaska, Colorado, Idaho, Hawaii and Washington wrote Sens. Mike Rounds (R-S.D.) and Edward Markey (D-Mass.) the day before the May 20 subcommittee hearing on S. 543.

The state legislators voiced numerous concerns about the lack of state representation, particularly, in water- and air-related advisory panels.

"States are largely underrepresented in EPA advisory panels," the state legislators wrote.

Clint Woods, executive director of the Association of Air Pollution Control Agencies, said the organization is examining what appears to be a lack of state and local participation in SAB committees.

The association has nominated state scientists, but they often are not selected, Woods said.

There also seems to be a geographical imbalance, he said.

Many Western states, for example, have not had a scientist selected for SAB in years, he said.

The association is working with the EPA to "diagnose" the problem, he said.

There may be criteria the EPA uses to select scientists—such as extent to which the expert has been published in peer reviewed journals—that make it difficult for a state scientist to be selected, Woods said.

State scientists may not know how to describe their expertise in ways that best demonstrate to the EPA that they have the necessary qualifications, he said.

"Both sides can probably do a better job," Woods said. "We want to diagnose the problem correctly."

States are better represented on the agency's Clean Air Act Advisory Committee, he said. That is one of the agency's 13 representative committees.

To contact the reporter on this story: Pat Rizzuto in Washington at [prizzuto@bna.com](mailto:prizzuto@bna.com)

To contact the editor responsible for this story: Larry Pearl at [lpearl@bna.com](mailto:lpearl@bna.com)

#### **For More Information**

The House report that accompanies the appropriations bill funding the EPA is available at <http://op.bna.com/env.nsf/r?Open=prio-9z2lqk>. A list of EPA advisory committees is available at <http://www2.epa.gov/faca/all-federal-advisory-committees-epa>. The Council of State Governments West letter is available at <http://op.bna.com/env.nsf/r?Open=prio-9z3qp5>.

---

Contact us at <http://www.bna.com/contact/index.html> or call 1-800-372-1033

ISSN 1521-9402

Copyright © 2015, The Bureau of National Affairs, Inc.. Reproduction or redistribution, in whole or in part, and in any form, without express written permission, is prohibited except as permitted by the BNA Copyright Policy.

# *FEDERAL ADVISORY COMMITTEE*

## *OUTREACH PLAN*

**For FY18 Appointments to the Clean Air Scientific Advisory Committee (CASAC), the Science Advisory Board (SAB), and SAB Committees.**

The summary for all CASAC, SAB, and SAB Committee recruitment follows:

- The SAB Staff Office published a Federal Register Notice on **[insert date]** requesting public nominations of experts for the CASAC, the SAB, and five SAB committees.
- On **[insert date]**, SAB Staff Office Director sent an email to the Deputy Administrator, Assistant Administrators, Regional Administrations, members of the Science and Technology Policy Council (STPC) and other senior agency leaders to request assistance in identifying a diverse range of qualified candidates.
- On **[insert date]**, the SAB Staff Office sent emails with the FR notice to over 200 organizations, including professional associations, state and tribal associations, nongovernmental associations, stakeholder/industry associations, and minority-serving academic institutions.
- SAB Staff Office provided information on the request for nominations for publication on the EPA Environmental Justice List Serve (the notice was published on **[insert date]**)
- SAB Staff Office contacted current members of the CASAC, SAB and SAB committees to request nominations of qualified diverse candidates for specific expertise areas.
- Additional candidates for the required expertise areas will be identified by the SAB Staff Office from the ranks of academic faculties, editorial boards of scholarly journals and other sources.

# FEDERAL ADVISORY COMMITTEE

## OUTREACH PLAN

Check the applicable boxes to indicate which internal and external contacts and methods of solicitation you plan to use in your outreach. Please send a courtesy copy of the solicitation request to all internal groups to Toni Rousey (FACMD).

### INTERNAL

- ☒ Assistant Administrators/Deputy Assistant Administrators/  
Regional Administrators (forward an electronic memo from the  
program's AA to the other Senior Leaders, and include a copy of  
that memo into the DRAFT Balance review package)
- ☐ Federal Advisory Committee Management Division Hispanic  
Association of Colleges and Universities (HACU) (contact: Michael  
Nieves 202-566-1478)
- ☐ Office of External Affairs and Environmental Education/Office of  
Public Engagement (contact: Javier Araujo 202-564-2642 or Lina  
Younes 202-564-9924)
- ☒ Office of Environmental Justice Listserv (contact: Victoria  
Robinson 202-564-6349)
- ☒ Federal Advisory Committee Management Division Minority  
Serving Institutions (MSI) Program (contact: Lester Lacey 202-  
566-1321)
- ☐ American Indian Environment Office (contact: JoAnn Chase 202-  
564-0878 and Andrew Baca on 566-0185)
- ☒ FACMD's FACA Diversity Database (contact: Toni Rousey 202-564-  
5356)

# FEDERAL ADVISORY COMMITTEE

## OUTREACH PLAN

List all other internal resources you plan to use:

---

---

### EXTERNAL

- ☒ Federal Register Notice
- ☒ Professional Associations (if applicable, list names of those you plan to contact)
- ☐ Newspapers (if applicable, list names of those you plan to contact)
- ☐ Journals/Magazines (if applicable, list names of those you plan to contact)
- ☐ Radio (if applicable, list names of those you plan to contact)

List of external associations and organizations that will be solicited:

- ☒ Public interest groups (list names of those you plan to contact)
- ☐ EPA's Facebook page
- ☐ EPA's Internet page
- ☐ EPA twitter account
- ☒ Colleges or Universities, including historically black college or universities and minority academic institutions (list names of those you plan to contact)  
State, local, and tribal governments

List all other external resources you plan to use:

---

---

**Signatures of DFOs and their Immediate Supervisor and Date:**

Aaron Yeow, 3/22/17  
Aaron Yeow, DFO, CASAC

Khanna Johnston, 3/30/2017  
Khanna Johnston, Acting Deputy Director,  
SAB Staff Office

Thomas Carpenter, 3/20/2017  
Thomas Carpenter, DFO, SAB

Christopher Zarba, 3/23/17  
Christopher Zarba, Director,  
SAB Staff Office

Thomas Carpenter, 3/20/2017  
Thomas Carpenter, DFO, SAB DWC

Christopher Zarba, 3/23/17  
Christopher Zarba, Director,  
SAB Staff Office

Sukhair Shallal, 3/20/17  
Sukhair Shallal, DFO, SAB CAAC

Khanna Johnston, 3/30/2017  
Khanna Johnston, Acting Deputy Director,  
SAB Staff Office

Thomas Armitage, 3/20/17  
Thomas Armitage, DFO, SAB EPEC

Khanna Johnston, 3/30/2017  
Khanna Johnston, Acting Deputy Director,  
SAB Staff Office

Holly Stallworth, 3/22/17  
Holly Stallworth, DFO, SAB EEAC

Khanna Johnston, 3/30/2017  
Khanna Johnston, Acting Deputy Director,  
SAB Staff Office

Edward Hanlon, 3/22/17  
Edward Hanlon, DFO, SAB EEC

Khanna Johnston, 3/30/2017  
Khanna Johnston, Acting Deputy Director,  
SAB Staff Office

Edward Hanlon, 3/22/17  
Edward Hanlon, DFO, SAB RAC

Khanna Johnston, 3/30/2017  
Khanna Johnston, Acting Deputy Director,  
SAB Staff Office

**Additional comments and/or concerns:**

---

---

---



Committee Name: Clean Air Scientific Advisory Committee

Designated Federal Officer: Aaron Yeow, (202) 564-2050 or  
yeow.aaron@epa.gov

Membership Package Content:

<u>1</u>	Invitational
<u>0</u>	Reappointment
<u>1</u>	Thank You
<u>        </u>	Members over 6-year term limit
<u>Yes</u>	Appointment/Reappointment of Chair/Vice Chair

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The CASAC was established pursuant to the Clean Air Act (CAA) Amendments of 1977, codified at 42 U.S.C. 7409(d)(2), to provide advice, information and recommendations to the Administrator on the scientific and technical aspects of air quality criteria and National Ambient Air Quality Standards for criteria pollutants (ozone; particulate matter; carbon monoxide; nitrogen oxides; sulfur dioxide; and lead).

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed) considered necessary to meet the Committee needs.

As required under the CAA section 109(d), CASAC is composed of seven members, with at least one member of the National Academy of Sciences, one physician, and one person representing state air pollution control agencies. The SAB Staff Office is seeking nominations of experts to serve on the CASAC who represent state air pollution control agencies and who have demonstrated high levels of competence, knowledge, and expertise in scientific/technical fields relevant to air pollution and air quality issues. The SAB Staff Office is especially interested in scientists with expertise described above who have knowledge and experience in air quality relating to criteria pollutants.

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

Committee Name: **EPA Science Advisory Board**

Designated Federal Officer: Thomas Carpenter, (202) 564-4885 or  
carpenter.thomas@epa.gov

Membership Package Content:

<u>up to 9</u>	Invitational
<u>up to 6</u>	Reappointment
<u>up to 9</u>	Thank You
<u>up to 2</u>	Members over 6-year term limit*
<u>1</u>	Appointment/Reappointment of Chair/Vice Chair

\*[Two SAB members, serving as Chairs of projects, are in their last year of the 6-year term and completing projects. They may need to be extended to finalize the advisory reports]

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The chartered SAB was established in 1978 under the authority of the Environmental Research, Development and Demonstration Authorization Act (ERDDAA), codified at 42 U.S.C. 4365, to provide independent scientific and technical peer review, consultation, advice and recommendations to the EPA Administrator on the scientific bases for EPA's actions and programs. While the SAB reports to the EPA Administrator, congressional committees specified in ERDDAA may ask the EPA Administrator to have the SAB provide scientific advice on a particular issue. The SAB has 7 standing committees (Tier 2 committees) and various ad hoc panels that work under its auspices. All the work of SAB committees and panels is under the direction of the chartered SAB. The chartered SAB reviews all SAB committee and panel draft reports and determines whether they are appropriate to send to the EPA Administrator.

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed) considered necessary to meet the Committee needs.

The chartered SAB requires expertise and points of view from a wide range of disciplines in the physical sciences, health sciences, engineering, and economics and other social sciences. For FY2018, the SAB Staff Office is seeking experts to serve on the chartered SAB in the following disciplines as they relate to human health and

the environment: *analytical chemistry; ecological sciences and ecological assessment; economics; engineering; geochemistry; health sciences; hydrology; hydrogeology; medicine; microbiology; modeling; pediatrics; public health; risk assessment; social, behavioral and decision sciences; statistics; and toxicology.*

The SAB Staff Office is especially interested in scientists in the disciplines described above who have knowledge and experience in air quality; agricultural sciences; climate change; drinking water; energy and the environment; water quality; water quantity and reuse; ecosystem services; community environmental health; sustainability; chemical safety; green chemistry; homeland security; and waste and waste management.

IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

Committee Name: SAB Chemical Assessment Advisory Committee

Designated Federal Officer: Suhair Shallal, (202) 564–2057 or  
shallal.suhair@epa.gov

Membership Package Content:

<u>up to 3</u>	Invitational
<u>up to 3</u>	Reappointment
<u>0</u>	Thank You
<u>0</u>	Members over 6-year term limit
<u>0</u>	Appointment/Reappointment of Chair/Vice Chair

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The SAB Chemical Assessment Advisory Committee (CAAC) provides advice through the chartered SAB regarding selected toxicological reviews of environmental chemicals available on EPA's Integrated Risk Information System (IRIS).

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed) considered necessary to meet the Committee needs.

For FY18, the SAB Staff Office is seeking experts with experience in chemical assessments. Members should have expertise in one or more of the following disciplines: *toxicology, including developmental/reproductive toxicology, and inhalation toxicology; Physiologically Based Pharmacokinetic (PBPK) modeling; carcinogenesis; biostatistics; and risk assessment.*

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

Committee Name: SAB Drinking Water Committee

Designated Federal Officer: Thomas Carpenter, (202) 564-4885 or  
carpenter.thomas@epa.gov.

Membership Package Content:

<u>0</u>	Invitational
<u>up to 3</u>	Reappointment
<u>4</u>	Thank You
<u>0</u>	Members over 6-year term limit*
<u>1</u>	Appointment/Reappointment of Chair/Vice Chair

\*[justification for those being extended beyond 6 years]

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The SAB Drinking Water Committee (DWC) provides advice through the chartered SAB on the scientific and technical aspects of EPA's national drinking water program.

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed) considered necessary to meet the Committee needs.

The SAB Staff Office is seeking nominations of experts with experience on drinking water issues. Members should have expertise in one or more of the following disciplines: *environmental engineering; epidemiology; microbiology; public health; and risk assessment.*

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

Committee Name: SAB Ecological Processes and Effects Committee

Designated Federal Officer: Thomas Armitage, (202) 564–2155 or  
armitage.thomas@epa.gov.

Membership Package Content:

<u>Up to 4</u>	Invitational
<u>0</u>	Reappointment
<u>4</u>	Thank You
<u>0</u>	Members over 6-year term limit*
<u>0</u>	Appointment/Reappointment of Chair/Vice Chair

\*[justification for those being extended beyond 6 years]

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The SAB Ecological Processes and Effects Committee (EPEC) provides advice through the chartered SAB on the science and research to assess, protect and restore the health of ecosystems.

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed) considered necessary to meet the Committee needs.

The SAB Staff Office is seeking nominations of experts to serve on the EPEC with demonstrated expertise in the following disciplines: *aquatic ecology; marine and estuarine ecology; ecological risk assessment; ecotoxicology; and systems ecology.*

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

Committee Name: SAB Environmental Economics Advisory Committee

Designated Federal Officer: Holly Stallworth, (202) 564-2073 or  
stallworth.holly@epa.gov.

Membership Package Content:

<u>Up to 4</u>	Invitational
<u>0</u>	Reappointment
<u>4</u>	Thank You
<u>0</u>	Members over 6-year term limit
<u>1</u>	Appointment/Reappointment of Chair/Vice Chair

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The SAB Environmental Economics Advisory Committee (EEAC) provides advice through the chartered SAB on methods and analyses related to economics, costs, and benefits of EPA environmental programs.

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed) considered necessary to meet the Committee needs.

The SAB Staff Office is seeking nominations of experts in environmental economics to serve on the EEAC.

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

Committee Name: SAB Environmental Engineering Committee

Designated Federal Officer: Edward Hanlon, (202) 564-2134 or  
hanlon.edward@epa.gov

Membership Package Content:

<u>0</u>	Invitational
<u>0</u>	Reappointment
<u>0</u>	Thank You
<u>0</u>	Members over 6-year term limit
<u>1</u>	Appointment/Reappointment of Chair/Vice Chair

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The SAB Environmental Engineering Committee (EEC) provides advice through the chartered SAB on risk management technologies to control and prevent pollution.

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed)  
considered necessary to meet the Committee needs.

The SAB Staff Office is seeking nominations of experts to serve on the EEC with demonstrated expertise in the following disciplines: *environmental and water quality; and remediation and technology*

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.



Committee Name: **SAB Radiation Advisory Committee**

Designated Federal Officer: Edward Hanlon, (202) 564-2134 or  
hanlon.edward@epa.gov

Membership Package Content:

<u>0</u>	Invitational
<u>7</u>	Reappointment
<u>0</u>	Thank You
<u>0</u>	Members over 6-year term limit
<u>1</u>	Appointment/Reappointment of Chair/Vice Chair

- I. Describe what the Committee's Charge is for this fiscal year?  
(Based on the Charter, the Administrator's priorities and/or others)

The Radiation Advisory Committee (RAC) provides advice through the chartered SAB on radiation protection, radiation science, and radiation risk assessment.

- II. Describe your strategy for this recruitment effort?

See Page 1-3.

- III. List the expertise or points of view (for the function to be performed)  
considered necessary to meet the Committee needs.

The SAB Staff Office is seeking nominations of experts to serve on the RAC with demonstrated expertise in the following disciplines: *radiation epidemiology; radionuclide fate and transport; radiation carcinogenesis; radiation health and safety; radiological risk assessment; and radiation exposure.*

- IV. Where do you plan to solicit for nominations to achieve a robust set of diverse candidates?

See Page 1-3.

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
CASAC Review of the EPA's Policy Assessment for the Review of the Primary National Ambient Air Quality Standards for Nitrogen Dioxide (External Review Draft – September 2016)	Nitrogen Oxides Policy Assessment for Primary (Health-based) National Ambient Air Quality Standards (NAAQS)
SAB Review of EPA's Proposed Methodology for Updating Mortality Risk Valuation Estimates for Policy Analysis	Valuing mortality risk reductions for policy: proposed updates to valuation and income elasticity estimates
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Spring 2016 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Spring 2016 Unified Agenda and their Supporting Science
Review of conclusions in Efficacy of Ballast Water Treatment Systems: a Report by the Science Advisory Board	Consideration of data on ballast water treatment efficacy and conclusions in the 2011 SAB report, Efficacy of Ballast Water Treatment Systems: a Report by the EPA Science Advisory Board
SAB Recommendations for EPA's FY 2016 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2016
CASAC Review of the EPA's Integrated Review Plan for the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – April 2016)	Particulate Matter Integrated Review Plan for National Ambient Air Quality Standards (NAAQS)
SAB Review of the EPA's draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources	Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources
CASAC Review of the EPA's Integrated Science Assessment for Sulfur Oxides – Health Criteria (External Review Draft – November 2015)	Sulfur Oxides Integrated Science Assessment for Primary (Health-based) National Ambient Air Quality Standards (NAAQS) (First External Review Draft)
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Fall 2015 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Fall 2015 Unified Agenda and their Supporting Science
Review of EPA's Draft Assessment entitled Toxicological Review of Benzo[a]pyrene (September 2014)	IRIS Assessment for Benzo[a]pyrene
CASAC Review of the EPA's Draft Integrated Review Plan for the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur	Nitrogen Dioxide and Sulfur Dioxide Integrated Review Plan for Secondary (Welfare-based) National Ambient Air Quality Standards (NAAQS)
Review of the EPA's Draft Fourth Contaminant Candidate List (CCL 4)	Drinking Water Contaminant Candidate List (Fourth List)
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Spring 2015 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Spring 2015 Unified Agenda and their Supporting Science

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
SAB Recommendations for EPA's FY 2015 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2015
Review of the IRIS Draft Toxicological Review of Trimethylbenzenes	IRIS Assessment for Trimethylbenzenes
Additional SAB Recommendations for EPA's FY2013 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2013
CASAC Review of the EPA's Review of the Primary National Ambient Air Quality Standards for Nitrogen Dioxide: Risk and Exposure Assessment Planning Document	Nitrogen Oxides Risk and Exposure Assessment Planning Document for Primary (Health-based) National Ambient Air Quality Standards (NAAQS)
CASAC Review of the EPA's Integrated Science Assessment for Oxides of Nitrogen – Health Criteria (Second External Review Draft – January 2015)	Nitrogen Oxides Integrated Science Assessment (Second External Review Draft) for Primary (Health-based) National Ambient Air Quality Standards (NAAQS)
SAB Recommendations for EPA's FY 2014 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2014
Science Advisory Board Review of the EPA's Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide (Revised External Review Draft - August 2014)	IRIS Assessment for Ethylene Oxide (2014) - Evaluation of Inhalation Carcinogenicity
SAB review of EPA's draft IRIS Ammonia Assessment	IRIS Assessment for Ammonia
Early Advice on an Ensemble Modeling Approach for Developing Lake Erie Phosphorus Objectives	Lake Erie Eutrophication Indicators - Ensemble Modeling Approach
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Fall 2014 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Fall 2014 Unified Agenda and their Supporting Science
SAB Review of the EPA's Draft Technical Guidance for Assessing Environmental Justice in Regulatory Analysis	Technical Guidance for Assessing Environmental Justice in Regulatory Analysis
Review of the EPA draft Report on the Environment 2014	Report on the Environment (ROE) 2014
Strategic Research Planning for 2016-2019: A Joint Report of the Science Advisory Board and Board of Scientific Counselors	Strategic Research Directions for EPA's Office of Research and Development (ORD) 2016-2019
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Fall 2013 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Fall 2013 Unified Agenda and their Supporting Science
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Spring 2014 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Spring 2014 Unified Agenda and their Supporting Science

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
SAB Review of the Draft EPA Report "Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence"	Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence.
Science Advisory Board (SAB) Consideration of the Adequacy of the Scientific and Technical Basis of the EPA's Proposed Rule titled "Definition of Waters of the United States under the Clean Water Act"	"Definition of 'Waters of the United States' Under the Clean Water Act" - Advice and comment on science supporting the EPA's proposed rule
SAB Recommendations for EPA's FY2013 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2013
Review of EPA's Recommendation for an Additional Federal Reference Method for Ozone: Nitric Oxide-Chemiluminescence	Ozone Federal Reference Method: Nitric Oxide (NO)-Chemiluminescence Method
CASAC Review of the EPA's Integrated Review Plan for the Primary National Ambient Air Quality Standard for Sulfur Dioxide (External Review Draft - March 2014)	Sulfur Oxides Integrated Plan for National Ambient Air Quality Standards (NAAQS)
CASAC Review of the EPA's Health Risk and Exposure Assessment for Ozone (Second External Review Draft - February, 2014)	Ozone Risk/Exposure Assessment (Second External Review Draft) for National Ambient Air Quality Standards (NAAQS)
CASAC Review of the EPA's Second Draft Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards	Ozone Policy Assessment (Second External Review Draft) for National Ambient Air Quality Standards (NAAQS) Review
CASAC Review of the EPA's Welfare Risk and Exposure Assessment for Ozone (Second External Review Draft)	Ozone Risk/Exposure Assessment (Second External Review Draft) for National Ambient Air Quality Standards (NAAQS)
CASAC Review of the EPA's Integrated Science Assessment for Oxides of Nitrogen – Health Criteria (First External Review Draft – November 2013)	Nitrogen Oxides Integrated Science Assessment (First External Review Draft) for Primary (Health-based) National Ambient Air Quality Standards (NAAQS)
CASAC Review of the EPA's Integrated Review Plan for the Primary National Ambient Air Quality Standards for Nitrogen Dioxide (External Review Draft)	Nitrogen Oxides Integrated Review Plan for Primary (Health-based) National Ambient Air Quality Standards (NAAQS)
SAB Advice on Advancing the Application of CompTox Research for EPA Chemical Assessments	EPA Risk Assessments - Use of Computational Toxicology
Science Advice and EPA Priority Topics	Science Advice and EPA Priority Topics
Concern about the Future of the Science to Achieve Results (STAR) Fellowship Program	Concern about the Future of the Science to Achieve Results (STAR) Fellowship Program

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
Science Advisory Board (SAB) Consideration of EPA Planned Actions in the Spring 2013 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Spring 2013 Unified Agenda and their Supporting Science
SAB Recommendations for EPA's FY2012 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2012
Initial Follow-up to Science Advisory Board (SAB) Discussions on December 4 2013	Thanks-December 2013 Meeting
Science Advisory Board (SAB) Discussions about EPA Planned Actions in the Fall 2012 Unified (Regulatory) Agenda and their Supporting Science	SAB Discussions about EPA Planned Actions in the Fall 2012 Unified (Regulatory) Agenda and their Supporting Science
Consultation on the EPA's Progress Report: Potential Impacts of Hydraulic Fracturing on Drinking Water Resources – December 2012	Hydraulic Fracturing Potential Impacts on Drinking Water Resources - 2012 Progress Report
Consultation on the EPA's Draft Plan for the Development of the Integrated Science Assessment for Nitrogen Oxides – Health Criteria (May 2013 Draft)	Nitrogen Oxides Draft Plan for Integrated Science Assessment - Health Criteria
CASAC Review of the EPA's Integrated Science Assessment for Lead (Third External Review Draft – November 2012)	Lead Integrated Science Assessment (Third External Review Draft) for National Ambient Air Quality Standards Review
CASAC Review of the EPA's Policy Assessment for the Review of the Lead National Ambient Air Quality Standards (External Review Draft – January 2013)	Lead Policy Assessment for National Ambient Air Quality Standards
SAB Advice on Approaches to Derive a Maximum Contaminant Level Goal for Perchlorate	Perchlorate - Approaches for Deriving Maximum Contaminant Level Goals for Drinking Water
SAB Review of Emissions-Estimating Methodologies for Broiler Animal Feeding Operations and for Lagoons and Basins at Swine and Dairy Animal Feeding Operations	Animal Feeding Operations Air Emission Estimation Methodologies
SAB Review of EPA's Retrospective Cost Study of the Costs of EPA Regulations: An Interim Report of Five Case Studies (March 2012)	Ex Ante Regulatory Cost Estimates - Exploratory Analysis
Review of EPA's Draft Assessment entitled Toxicological Review of Libby Amphibole Asbestos (August 2011)	IRIS Assessment for Libby Amphibole Asbestos
CASAC Review of the EPA's Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards (First External Review Draft – August 2012)	Ozone Policy Assessment (First External Review Draft) for National Ambient Air Quality Standards

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
CASAC Review of the EPA's Health Risk and Exposure Assessment for Ozone (First External Review Draft - Updated August 2012) and Welfare Risk and Exposure Assessment for Ozone (First External Review Draft - Updated August 2012)	Ozone Risk/Exposure Assessment (First External Review Draft) for National Ambient Air Quality Standards (NAAQS)
CASAC Review of the EPA's Integrated Science Assessment for Ozone and Related Photochemical Oxidants (Third External Review Draft – June 2012)	Ozone Integrated Science Assessment (Third External Review Draft) for National Ambient Air Quality Standards Review
Implementation of ORD Strategic Research Plans: A Joint Report of the Science Advisory Board and ORD Board of Scientific Counselors	Implementation of ORD's New Strategic Directions
SAB Review of EPA's Accounting Framework for Biogenic CO2 Emissions from Stationary Sources (September 2011)	Carbon Dioxide Accounting for Emissions from Biogenic Sources
SAB Review of the EPA's Ecological Assessment Action Plan	Ecological Assessment Action Plan
CASAC Review of the EPA's Integrated Science Assessment for Lead (Second External Review Draft – February 2012)	Lead Integrated Science Assessment (Second External Review Draft) for National Ambient Air Quality Standards Review
Science Integration for Decision Making at the U.S. Environmental Protection Agency	Science Integration for Decision Making
SAB Recommendations for EPA's FY2011 Scientific and Technological Achievement Awards	Scientific and Technological Achievement Awards (STAA) 2011
Consultation on Proposed Updates and Changes to MARSSIM	Radiation Survey Manual (Multi-Agency Radiation Survey and Site Investigation Manual) Revisions
Science Advisory Board Comments on the President's Requested FY 2013 Research Budget	President's Requested Fiscal Year 2013 Science and Research Budget Review
CASAC Review of the EPA's Integrated Science Assessment for Ozone and Related Photochemical Oxidants (Second External Review Draft – September 2011)	Ozone Integrated Science Assessment (Second External Review Draft) for National Ambient Air Quality Standards Review
Review of the Draft Near-Road Nitrogen Dioxide Monitoring Technical Assistance Document	Near-road Ambient Air Monitoring Requirements - Network Design Guidance Development
Advisory on EPA's Draft Technical Report entitled Considerations Related to Post-Closure Monitoring of Uranium In-Situ Leach/In-Situ Recovery (ISL/ISR) Sites	Uranium In-Situ Leach Recovery - Post-closure Stability Monitoring
Consultation on EPA report on the Value of Water to the U.S. Economy	Estimating the Value of Water to the U.S. Economy

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
Great Lakes Restoration Initiative Action Plan Review	Great Lakes Restoration Initiative Action Plan FY2010 - FY2014 and Implementation Strategy
CASAC Review of the EPA's Integrated Science Assessment for Lead (First External Review Draft - May 2011)	Lead Integrated Science Assessment (First External Review Draft) for National Ambient Air Quality Standards Review
Office of Research and Development (ORD) New Strategic Research Directions: A Joint Report of the Science Advisory Board (SAB) and ORD Board of Scientific Councilors (BOSC)	New ORD Research Program Strategic Directions
Consultation on EPA's Review of the National Ambient Air Quality Standards for Lead: Risk and Exposure Assessment Planning Document	Lead Risk/Exposure Methods for National Ambient Air Quality Standards (NAAQS) Review
Review of EPA's Draft National-Scale Mercury Risk Assessment	Mercury Risk Assessment
Review of EPA's Draft Oil Spill Research Strategy	Oil Spill Research Strategy
Review of EPA's Photochemical Assessment Monitoring Stations (PAMS) Network Re-engineering Project	Photochemical Assessment Monitoring Stations (PAMS) - Network Re-engineering
SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements	Partial Lead Service Line Replacement Effectiveness
SAB Review of EPA's Reanalysis of Key Issues Related to Dioxin Toxicity and Response to NAS Comments (May 2010)	Dioxin Reassessment - Response to the National Academies of Science
Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options - A Report of the Science Advisory Board	Reactive Nitrogen: An Integrated Approach
Review of the Draft Report to Congress on Black Carbon	Black Carbon Report to Congress
CASAC comments on EPA's Integrated Science Assessment for Ozone and Related Photochemical Oxidants (March 2011)	Ozone Integrated Science Assessment (First External Review Draft) for National Ambient Air Quality Standards Review
SAB Review of EPA's Draft Hydraulic Fracturing Study Plan	Hydraulic Fracturing Study Plan
Review of "Valuing Mortality Risk Reductions for Environmental Policy: A White Paper" (December 10, 2010)	Mortality Risk Measurement and Valuation for Policy Analysis
Review of EPA's draft Approaches for Deriving Numeric Nutrient Criteria for Florida's Estuaries, Coastal Waters, and Southern Inland Flowing Waters	Nutrient Criteria for Florida's Estuarine and Coastal Waters, and Southern Canals - Methods and Approaches for Deriving Numeric Approaches
Efficacy of Ballast Water Treatment Systems: a Report by the EPA Science Advisory Board	Ballast Water Advisory

## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
SAB Review of EPA's Approach for Developing Lead Dust Hazard Standards for Residences (November 2010 Draft) and Approach for Developing Lead Dust Hazard Standards for Public and Commercial Buildings (November 2010 Draft)	Lead Paint Hazard Standards for Residential Buildings, Public and Commercial Buildings, and Renovations of Exteriors of Public and Commercial Buildings
Consultation on EPA's Ozone National Ambient Air Quality Standards: Scope and Methods Plan for Health Risk and Exposure Assessment (April 2011) and Ozone National Ambient Air Quality Standards: Scope and Methods Plan for Welfare Risk and Exposure Assessment (April 2011)	Ozone Risk/Exposure Methods for National Ambient Air Quality Standards (NAAQS)
Science Advisory Board Comments on the President's Requested FY 2012 Research Budget	President's Requested Fiscal Year 2012 Science and Research Budget Review
Review of EPA Draft Documents on Monitoring and Methods for Oxides of Nitrogen (NOx) and Sulfur (SOx)	Nitrogen Oxides and Sulfur Oxides Monitoring and Methods
Consultation on EPA's Draft Integrated Review Plan for the National Ambient Air Quality Standards for Lead	Lead Integrated Plan for National Ambient Air Quality Standards (NAAQS) Review
CASAC Advice on the Policy Assessment for the Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur (February 2011)	CASAC Comments on EPA's "Policy Assessment for the Review of the Secondary National Ambient Air Quality Standards for NOx and SOx"
SAB Recommendations for EPA's FY2010 Scientific and Technological Achievement Awards (STAA)	Scientific and Technological Achievement Awards (STAA) 2010
	Scientific and Technological Achievement Awards (STAA) 2010
Review of Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams	Interim Water Quality Advisory Methodology for Estimating Conductivity
Review of EPA's Draft Report on Aquatic Ecosystem Effects of Mountaintop Mining and Valley Fills	Mountaintop Mining – Valley-Fill Ecological Assessment
Clean Air Scientific Advisory Committee (CASAC) Response to Charge Questions on the Reconsideration of the 2008 Ozone National Ambient Air Quality Standards	Ozone - Solicitation of CASAC Advice on EPA's Reconsideration of the 2008 Primary National Ambient Air Quality Standard
SAB Review of EPA's "Development of a Relative Potency Factor (RPF) Approach for Polycyclic Aromatic Hydrocarbon (PAH) Mixtures (February 2010 Draft)"	IRIS Technical Document for Polycyclic Aromatic Hydrocarbon (PAH) Mixtures - Relative Potency Factor (RPF) Approach
	Inorganic Arsenic - Toxicological Review for IRIS



## SAB Staff Office Completed, Current, and Upcoming Projects and Reports

Completed Report Title	Project
Review of EPA's Responsiveness to SAB 2007 Recommendations for the Revision of Cancer Assessment of Inorganic Arsenic - A report of the SAB Inorganic Arsenic Cancer Review Work Group	Inorganic Arsenic - Toxicological Review for IRIS
Review of the Policy Assessment for the Review of the Secondary National Ambient Air Quality Standard for NOx and SOx: Second Draft	Nitrogen Dioxide and Sulfur Dioxide Policy Assessment for Secondary (Welfare-based) National Ambient Air Quality Standards (NAAQS)
CASAC Review of EPA's White Paper, "Approach for the Development of a New Federal Reference Method (FRM) for Lead in Total Suspended Particulates (Pb-TSP)"	Lead Monitoring Methods - Proposed Pb-TSP Federal Reference Method in Support of Revised National Ambient Air Quality Standards
Review of EPA's Draft Assessment entitled "Toxicological Review of Trichloroethylene	IRIS Assessment for Trichloroethylene
Review of the Final Integrated Report for the Second Section 812 Prospective Study of the Benefits and Costs of the Clean Air Act	Review of the Second Prospective Clean Air Act Section 812 Benefit-Cost Report
Review of the Policy Assessment for the Review of the Secondary National Ambient Air Quality Standard for NOx and SOx: Second Draft	Nitrogen Dioxide and Sulfur Dioxide Policy Assessment for Secondary (Welfare-based) National Ambient Air Quality Standards (NAAQS)

# Deliberative Process / Ex. 5

# Deliberative Process / Ex. 5

# Deliberative Process / Ex. 5

Message

---

**From:** Dravis, Samantha [dravis.samantha@epa.gov]  
**Sent:** 5/17/2017 8:11:26 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** FW: Draft BOSC FRN  
**Attachments:** FRN BOSC Nominations 5-17-17.docx

Let's discuss when you have had a chance to look at this.

---

**From:** Gwinn, Maureen  
**Sent:** Wednesday, May 17, 2017 4:10 PM  
**To:** Kavlock, Robert <Kavlock.Robert@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>  
**Cc:** Rees, Sarah <rees.sarah@epa.gov>; Deener, Kathleen <Deener.Kathleen@epa.gov>; Plotkin, Viktoriya <Plotkin.Viktoriya@epa.gov>; Perry, Dale <Perry.Dale@epa.gov>; Blackburn, Elizabeth <Blackburn.Elizabeth@epa.gov>; Burden, Susan <Burden.Susan@epa.gov>  
**Subject:** Draft BOSC FRN

Samantha,

Please find attached a draft Federal Register Notice for BOSC nominations. The list of expertise sought in this draft is based on our last nomination process in 2013 and we are actively updating both the outreach plan and list of expertise sought. This outreach plan is required as part of the FACA process prior to or immediately following the release of the FR notice. We will have a new draft for Bob to bring to your meeting next week.


If you have any questions, please don't hesitate to reach out. Bob can also go over this process in more detail when you meet next Thursday.

Maureen

Maureen R. Gwinn, PhD DABT ATS  
Senior Science Advisor  
Immediate Office of the Assistant Administrator  
Office of Research and Development  
1200 Pennsylvania Ave NW  
MC 8101R  
Washington, DC 20460

t(202)564-4621

f(202)565-2430

m( Personal Phone / Ex. 6)

---

**From:** Kavlock, Robert  
**Sent:** Wednesday, May 17, 2017 10:13 AM  
**To:** Dravis, Samantha <dravis.samantha@epa.gov>  
**Cc:** Rees, Sarah <rees.sarah@epa.gov>; Deener, Kathleen <Deener.Kathleen@epa.gov>; Gwinn, Maureen <gwinn.maureen@epa.gov>  
**Subject:** Re: RE:

Samantha

Will see what can be done.

Bob

On May 17, 2017, at 3:32 PM, Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)> wrote:

Bob,

I would really like to get the FRN out this week or at least see a draft ASAP. Do you think we could get a draft by COB today?

---

**From:** Kavlock, Robert

**Sent:** Tuesday, May 16, 2017 5:34 PM

**To:** Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>

**Cc:** Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>; Gwinn, Maureen <[gwinn.maureen@epa.gov](mailto:gwinn.maureen@epa.gov)>; Plotkin, Viktoriya <[Plotkin.Viktoriya@epa.gov](mailto:Plotkin.Viktoriya@epa.gov)>; Deener, Kathleen <[Deener.Kathleen@epa.gov](mailto:Deener.Kathleen@epa.gov)>; Hauchman, Fred <[hauchman.fred@epa.gov](mailto:hauchman.fred@epa.gov)>; Blackburn, Elizabeth <[Blackburn.Elizabeth@epa.gov](mailto:Blackburn.Elizabeth@epa.gov)>

**Subject:** Re:

Samantha

Thanks for the note. I am in Europe this week but will ask the team to start working on this. However I think it is important for us to develop a comprehensive strategy for outreach in conjunction with a FRN so that we reach the most appropriate target audiences. Hopefully we can meet in the next couple of weeks and talk this through. In the meantime we can work on the general announcement.

Bob

On May 16, 2017, at 6:55 PM, Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)> wrote:

Bob,

I would really like to get an FR notice drafted up as soon as possible re-opening the nomination process for the BOSC. Would you kindly have your staff prepare this notice to go out this week? I will have Robin find us a mutually acceptable time to meet in the near future.

Best,  
Samantha

Message

---

**From:** Zarba, Christopher [Zarba.Christopher@epa.gov]  
**Sent:** 8/9/2017 7:29:24 PM  
**To:** Yamada, Richard (Yujiro) [yamada.richard@epa.gov]  
**CC:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** CASAC Briefing Materials (Tomorrow Thursday @ 1030) 3rd Fl RRB. SAB Office  
**Attachments:** CASAC list of candidates briefing.pdf; Draft 2017 CASAC widecast.pdf; Draft 2017 CASAC list of candidates.pdf; Draft 2017 CASAC list of candidates biosketches.pdf

Feel free to share this with others that will be attending.

*Christopher S. Zarba*

**US EPA Science Advisory Board**

zarba.christopher@epa.gov

**O** (202) 564-0760

**M** Personal Phone / Ex. 6

---

**From:** Yeow, Aaron  
**Sent:** Wednesday, August 09, 2017 3:13 PM  
**To:** Zarba, Christopher <Zarba.Christopher@epa.gov>  
**Cc:** Johnston, Khanna <Johnston.Khanna@epa.gov>  
**Subject:** Briefing Materials

Chris,

Attached are the materials for the briefing with Dr. Richard Yamada tomorrow. Please note that some of the information in the attachments are not complete as we are still waiting on some materials from the candidates.

-Aaron

Aaron Yeow, M.P.H.  
Designated Federal Officer  
U.S. Environmental Protection Agency  
Science Advisory Board  
202-564-2050 (P)  
202-565-2098 (F)

Mailing Address:  
USEPA, 1200 Pennsylvania Avenue, NW, (1400R), Washington, DC 20460

Physical Location/Deliveries:  
1300 Pennsylvania Avenue, NW, Suite 31150, Washington, DC 20004

Message

---

**From:** Torma, Tim [Torma.Tim@epa.gov]  
**Sent:** 5/31/2017 3:25:50 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Flynn, Mike [Flynn.Mike@epa.gov]; Grantham, Nancy [Grantham.Nancy@epa.gov]; Rees, Sarah [rees.sarah@epa.gov]; Richardson, RobinH [Richardson.RobinH@epa.gov]  
**Subject:** Revised Hot Items file  
**Attachments:** Hot Topics 05-26-2017.docx

Brittany,

Attached is the revised file from our meeting yesterday. I will send follow-up information on the two items noted in the file when I receive answers.

TT

Tim Torma  
Senior Advisor  
U.S. EPA Office of Policy  
202-566-2864



Message

---

**From:** Torma, Tim [Torma.Tim@epa.gov]  
**Sent:** 5/30/2017 3:19:47 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** Hot Topics meeting today at 5:30  
**Attachments:** Hot Topics 05-26-2017.docx

Brittany,

For the Hot Topics meeting today at 5:30, I will use the file I sent last Friday, attached here again. Let me know if there are other specific topics you want added to the list or if you want additional info about any of the topics on the list.

TT

Tim Torma  
Senior Advisor  
U.S. EPA Office of Policy  
202-566-2864

Message

---

**From:** Torma, Tim [Torma.Tim@epa.gov]  
**Sent:** 5/26/2017 6:54:25 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Flynn, Mike [Flynn.Mike@epa.gov]; Richardson, RobinH [Richardson.RobinH@epa.gov]; Rees, Sarah [rees.sarah@epa.gov]; Grantham, Nancy [Grantham.Nancy@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]  
**Subject:** 05/26 Hot Issues  
**Attachments:** Hot Topics 05-26-2017.docx

Brittany,

Attached are items flagged from the 05/25 Weekly Reports. Let me know if you or others want any follow-up on any of the items in the list. Have a great weekend.

TT

Tim Torma  
Senior Advisor  
U.S. EPA Office of Policy  
202-566-2864

Message

---

**From:** Torma, Tim [Torma.Tim@epa.gov]  
**Sent:** 5/12/2017 9:53:15 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Grantham, Nancy [Grantham.Nancy@epa.gov]; Flynn, Mike [Flynn.Mike@epa.gov]; Richardson, RobinH [Richardson.RobinH@epa.gov]; Rees, Sarah [rees.sarah@epa.gov]; Freire, JP [Freire.JP@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]  
**Subject:** 05/12 Hot Topics with revised to-do column and additional items  
**Attachments:** 20170512-nrdc-petition-rollout-v2.docx; Hot Topics 05-12-2017.docx; EC Petition Response 4-27-17 .docx

Brittany,

Attached is the Hot Topics file from today with revisions.

Items added include:

# Deliberative Process / Ex. 5

Please let me know if you need more info on any items or if I got the follow-up wrong. Have a great weekend.

TT

Tim Torma  
Senior Advisor  
U.S. EPA Office of Policy  
202-566-2864

Meleah Geertsma  
Senior Attorney  
Natural Resources Defense Council  
20 N. Wacker Drive  
Suite 1600  
Chicago, IL 60606

RE: Response to Petition for Emergency Action under the Safe Drinking Water Act, 42 U.S.C. § 300i, to Abate the Imminent and Substantial Endangerment to East Chicago, Indiana Residents from Lead Contamination in Drinking Water on Behalf of Calumet Lives Matter; We the People for East Chicago; East Chicago Calumet Coalition Community Advisory Group (the “CAG”); Community Strategy Group; the Hoosier Environmental Council; Duneland Environmental Justice Alliance; Northwest Indiana Federation of Interfaith Organizations; The Twin City Minister Alliance of East Chicago; Greater First Baptist Church of East Chicago; Antioch Network of Church & Ministries; League of United Latin American Citizens—Indiana Council (“LULAC”); NAACP / NAACP Indiana State Conference Environmental and Climate Justice Program; National Nurses United; Loyola University Chicago School of Law’s Health Justice Project; the Sargent Shriver National Center on Poverty Law (the “Shriver Center”); University of Chicago Law School’s Abrams Environmental Law Clinic; Northwestern University Pritzker School of Law’s Environmental Advocacy Clinic and the Natural Resources Defense Council (“NRDC”)

Dear Ms. Geertsma:

On March 2, 2017, the United States Environmental Protection Agency (EPA) received your correspondence on behalf of the Petitioners referenced above, asking the Agency to invoke its Safe Drinking Water Act (SDWA) Section 1431 emergency authority to protect East Chicago, Indiana residents from lead contamination in drinking water. We are writing to provide a status update.

As you are aware, on February 9, 2017 prior to submitting your petition, Indiana’s Governor Eric Holcomb had declared that a 30-day State Disaster Emergency existed within the USS Lead Site affected area of East Chicago. He later extended that declaration to April 11, 2017. On April 19, 2017, at the invitations of Governor Holcomb and East Chicago’s Mayor Anthony Copeland, EPA Administrator Scott Pruitt met with elected officials and citizens to discuss federal, state and local efforts to address lead contamination issues in East Chicago. The following day, Governor Holcomb signed a law, effective immediately, to declare an emergency of indefinite duration that designated East Chicago neighborhoods contaminated

by lead or arsenic soil contamination as “areas of special concern.” I am pleased to relate the State of Indiana (State) and the City of East Chicago (City) have taken a number of important steps to address lead-related concerns including:

- The Indiana State Department of Health (ISDH) has sponsored more than 30 blood lead testing clinics held throughout East Chicago and 11 multi-state agency “one-stop shops” for residents within the USS Lead Superfund site that included blood lead testing, immunization and other health services.
- The ISDH has provided \$148,000 to the East Chicago Health Department (ECHD) for a public health nurse position, lead educator and staff support.
- The ISDH will continue to provide resources to the East Chicago Health Department to enable that local agency to conduct free daily blood lead testing.
- The ISDH is continuing to provide training and supplies for blood lead testing clinics operated by the East Chicago Women, Infants and Children offices.
- As part of its state-wide school water testing program, the State is providing East Chicago schools tap water testing for lead and the Indiana Department of Environmental Management (IDEM) is working with East Chicago schools to define steps to address any issues identified (e.g., drinking water faucet replacement).
- IDEM is providing \$136,000 to purchase and install 1,250 drinking water filters for residents in Zones 2 and 3 of the USS Lead Site. Beginning April 10, 2017, assuming residents will provide access, IDEM started installing the tap water filters and providing two replacement filter cartridges. IDEM expects to install filters in each household by the end of April. As you may be aware, a study of the efficacy of tap filters in Flint, Michigan concluded using a tap filter certified to remove lead that is properly installed and maintained, provides water safe for pregnant women and children under six including bottle-fed and nursing children. ([Flint Filter Challenge Assessment \(PDF\)](#) (6 pp, 288 K, June 22, 2016) [Flint Filter Challenge Assessment \(Spanish\) \(PDF\)](#) (6 pp, 495 K, June 22, 2016) Once installed, these tap filters should alleviate residents’ concerns in the short-term regarding lead service lines and generally eliminate the need for bottled water.
- IDEM has been working with the City to closely monitor the level of orthophosphate, which lines pipes and helps inhibit lead leaching into water. Under IDEM’s oversight, the City will make adjustments to increase the orthophosphate levels as needed.
- IDEM continues to work with the City to verify continued compliance with the SDWA Lead and Copper Rule in the USS Lead Site zones and throughout the City. IDEM will conduct testing to verify the City’s water supply is in compliance with the SDWA and will expand compliance monitoring throughout the distribution system to be representative of the entire City.
- The City, using the State Revolving Fund program, anticipates replacing lead drinking water service lines in Zones 2 and 3 of the USS Lead Site.

In addition to the bulleted items above, I have enclosed two documents. The first is the April 3, 2017 letter from the Commissioner of IDEM, who presented a comprehensive statement itemizing all the activities that multiple State departments and agencies have contributed in response to the Governor’s emergency declaration. The second is a copy of the April 20, 2017 Indiana law that continues to direct state assistance to the East Chicago areas of special concern.

EPA recognizes your petition sought additional relief that was not discussed in the IDEM Commissioner's April 3 correspondence. The other relief requested in your March 2 petition included water filter installation and faucet replacement for all City households, not just those in the Zones 2 and 3 residential areas of the USS Lead Site. As suggested in your petition, the State prioritized households in the Zones 2 and 3 of the Superfund site where EPA is working to remove lead-contaminated soils. By providing water filters first for those homes in those Zones, IDEM will help these households avoid cumulative exposures to lead. In the meantime, the City and IDEM's expanded residential tap sampling throughout East Chicago should help inform decisions about whether filter distribution needs to be expanded city-wide. EPA has pledged continued technical support for IDEM's and the City's drinking water sampling efforts, lead service line replacement and other related water issues.

Please note that although the City has been in compliance with the SDWA Lead and Copper Rule, the City is expanding testing of its distribution system to ensure that the drinking water sampled is representative of lead levels throughout the City. EPA will continue to monitor these State and local efforts while at the same time resuming work in Zones 2 and 3 to remove lead and arsenic contaminated soils. Moreover, EPA, IDEM and the City have also developed a Soil Removal and Drinking Water Service Line Replacement Coordination Plan to facilitate effective inter-agency communication during the City's lead service line replacement project and EPA's soil cleanup work.

In 2016, EPA cleaned up 17 properties in Zone 2 and 38 properties in Zone 3. It intends in 2017 to address 120 homes in Zone 3 and at least 72 homes in Zone 2. EPA will also sample the interiors of these homes and, if lead or arsenic is found above screening levels, clean the interiors to reduce exposure to lead or arsenic contaminated dust.

Since 2006, EPA has met with the community in order to ensure residents were aware of EPA's proposed actions and could have input into EPA's decisions. These efforts intensified in the fall of 2015 when EPA provided on-site support in a local neighborhood storefront office, and again in the summer/fall of 2016 when EPA opened and staffed a command center at the Carrie Gosch Elementary School. EPA continues to engage with the community and elected officials. To help residents and businesses become familiar with the Superfund cleanup process and opportunities for involvement, during the past three months EPA has: (1) given a Superfund and drinking water panel presentation in East Chicago with an open house held immediately afterward; (2) held a free "Superfund 101 Training" in East Chicago to explain the Superfund process to residents and other interested persons; (3) held Superfund Job Training Initiative (Super JTI) information sessions; and (4) attended an East Chicago/Calumet Coalition meeting to explain the recently completed enforcement agreement that allows the cleanup work to go forward this year in Zone 2. During the first week of April there were more Super JTI information sessions and EPA also participated in an NAACP/Twin City Ministerial Alliance Community Listening Session. A two-week long Superfund JTI instructional program was held from April 10 to April 21. EPA along with its State and local partners have devoted enormous resources to ensuring that this community, long-burdened by the legacy of historic manufacturing wastes and emissions will be assured of a healthier future – in both human and economic terms.

In addition to continuing the work that EPA is performing directly, EPA will continue to assess the efficacy of State, local and private party actions to reduce the lead levels in East Chicago drinking water. In light of the actions described above, EPA is not invoking its authority under SDWA Section 1431 at this time. EPA will continue to closely monitor the situation to ensure public health is protected. EPA expressly reserves its right to take formal action under SDWA Section 1431 in the future should these activities be insufficient to protect public health.

Should you have any questions about this letter, please contact the EPA Region 5 Regional Counsel, Leverett Nelson, at [nelson.leverett@epa.gov](mailto:nelson.leverett@epa.gov).

Sincerely,

Robert A. Kaplan  
Regional Administrator

Enclosure: Letter dated April 3 from Bruno Pigott, IDEM Commissioner addressed to  
Robert A. Kaplan  
House Enrolled Act No. 1344

cc: Governor Eric J. Holcomb  
Bruno Pigott, IDEM Commissioner

Message

---

**From:** Germann, Sandy [Germann.Sandy@epa.gov]  
**Sent:** 8/15/2017 11:24:11 AM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Letendre, Daisy [letendre.daisy@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]; Walter, Simone [walter.simone@epa.gov]  
**Subject:** FW: For Final REview: EJSCREEN materials  
**Attachments:** PRESS RELEASE Release of 2017 EJSCREEN Update\_8-9-17.docx; [BLOG] Release of 2017 EJSCREEN Update\_8-9-17.docx

Hi Brittany, will you be able to get to this today? The release is scheduled for tomorrow, and OPA needs to provide final draft materials to Liz.

Sandy Germann  
US EPA Office of Policy  
202-631-0272  
[germann.sandy@epa.gov](mailto:germann.sandy@epa.gov)

---

**From:** Letendre, Daisy  
**Sent:** Monday, August 14, 2017 2:09 PM  
**To:** Germann, Sandy <[Germann.Sandy@epa.gov](mailto:Germann.Sandy@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>  
**Cc:** Kime, Robin <[Kime.Robin@epa.gov](mailto:Kime.Robin@epa.gov)>; Walter, Simone <[walter.simone@epa.gov](mailto:walter.simone@epa.gov)>  
**Subject:** RE: For Final Review: EJSCREEN materials

I am good with these. Apologies for the delay, just finished reading through.

Samantha is tied up today but I'm looping in Brittany.

---

**From:** Germann, Sandy  
**Sent:** Thursday, August 10, 2017 9:33 AM  
**To:** Letendre, Daisy <[letendre.daisy@epa.gov](mailto:letendre.daisy@epa.gov)>  
**Cc:** Kime, Robin <[Kime.Robin@epa.gov](mailto:Kime.Robin@epa.gov)>; Dalbey, Matthew <[Dalbey.Matthew@epa.gov](mailto:Dalbey.Matthew@epa.gov)>  
**Subject:** For Final Review: EJSCREEN materials

Hi Daisy, Per the note below, OEJ is preparing for release of EJSCREEN next Wed. Matt Dalbey and I have reviewed and commented on the press release and blog. I know Simone sent you earlier drafts, but just wanted to see if you wanted to give the latest products a final look. Please let us know if you or Samantha think any changes are needed. Thank you!

Sandy Germann  
US EPA Office of Policy  
202-631-0272  
[germann.sandy@epa.gov](mailto:germann.sandy@epa.gov)

---

**From:** Senn, John  
**Sent:** Wednesday, August 09, 2017 3:57 PM  
**To:** Grantham, Nancy <[Grantham.Nancy@epa.gov](mailto:Grantham.Nancy@epa.gov)>; Germann, Sandy <[Germann.Sandy@epa.gov](mailto:Germann.Sandy@epa.gov)>; Orquina, Jessica <[Orquina.Jessica@epa.gov](mailto:Orquina.Jessica@epa.gov)>; Wade, James <[Wade.James@epa.gov](mailto:Wade.James@epa.gov)>; Valentine, Julia <[Valentine.Julia@epa.gov](mailto:Valentine.Julia@epa.gov)>; Lynn, Tricia <[lynn.tricia@epa.gov](mailto:lynn.tricia@epa.gov)>



**Cc:** Nguyen, Loan <[Nguyen.Loan@epa.gov](mailto:Nguyen.Loan@epa.gov)>

**Subject:** For OPA/OMR/OWC review: EJSCREEN materials

Hi everyone—as you already know, we are on track to make live a number of updates to EJSCREEN soon (target date is next Wednesday). Attached are our draft release and blog for the announcement, which have both been reviewed and approved by OECA and OP leadership.

And here are a couple messages for the main accounts and one for the OECA Twitter account.

Tweet for main account:

We recently updated our environmental justice mapping tool EJSCREEN with new environmental & demographic data. (link to release goes here)

Facebook post for main account:

EPA's environmental justice screening and mapping tool EJSCREEN was recently updated and now includes the most up-to-date environmental and demographic data available, a new water quality indicator, the ability to look at cities and municipalities, and other improvements. (link to release goes here)

Tweet for EPAJustice:


New on our blog: Read about how improvements to our EJSCREEN data tool will benefit a broad range of stakeholders. (link to blog goes here)

The EJ office will also send a message to their listserv about the updates, but that language will be drawn from the press release.

FYI, Jess, the update will not include any new web language, just data updates to the tool itself.


Let me know if anyone has any questions or wants to connect on this—thanks,  
John

John Senn  
Acting Communications Director  
Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
(202) 564-8996 - [senn.john@epa.gov](mailto:senn.john@epa.gov)  
<https://twitter.com/EPAJustice>



## Environmental Justice in Action

BLOGGING ABOUT EFFORTS TO ACHIEVE ENVIRONMENTAL JUSTICE IN OVERBURDENED COMMUNITIES



To: (Name, Position, Office, Building, Room number, Mailcode)	Initials	Date
1. Matthew Tejada, Director, OEJ	Mst	7/26/17
2. John Senn, Communications Director, OECA	JAS	8/8/17
3. Jessica Orquina, Director, OWC		
4. Other (as appropriate):		

## Release of 2017 EJSCREEN Update

*By Matthew Tejada*

One of the best parts about working for environmental justice at EPA is that we constantly have the opportunity to engage with people from all walks of life across the United States. We hear from county commissioners, road builders, city planners, elected officials, professors, tribal leaders, and of course we hear from community members and community based organizations on a whole host of issues impacting their health, their environment and their quality of life. Over the years, it has been heartening to hear what communities have learned, and could achieve, when they used [EJSCREEN](#).

EJSCREEN was released to the public to provide a common starting point for engagement and mutual understanding when discussing environmental justice issues. It provides people with a tool to consider impacts, to ask better questions, and to bring a deeper level of transparency to important data.

EJSCREEN's use has continually grown since it was publicly released. In two years, it has been used over 200,000 times, and we have constantly worked to make sure that the tool evolves to meet the needs of its ever-expanding user base.

I am excited to announce that EJSCREEN has some important new enhancements.

- We improved our water indicator to show water bodies potentially impacted by toxicity and water pollution.
- At the request of many of our local government and planning users, we have added municipal level boundaries.
- We have included new and improved layers on schools and public housing.

And we have of course updated all of the tool's environmental and demographic indicators with the most recently available data.

Over the past year, we have focused on expanding the ways we engage with our users. We completed an in-depth user survey to gain greater insight for improving EJSCREEN in the future. We are also generating case studies so users can learn how others use the tool in their work.

The range of uses is impressive. In New Jersey, transportation agencies are using EJSCREEN to inform initial planning for new road projects. A North Carolina-based community group used EJSCREEN to identify air-quality concerns and potential environmental threats to adjacent neighborhoods. And EJSCREEN helped Coeur D'Alene, Idaho identify vulnerable areas for greater outreach and consideration. These examples point to why environmental justice is important and how making good data transparent puts environmental justice into action.

To help our many users understand the tool and its updates, we will be hosting a series of webinars with EPA EJSCREEN experts on [August 21](#), [September 7](#) and [September 14](#).

We hope that you will test out EJSCREEN to see how it can serve your needs and [provide us feedback](#) on how we can continue to improve it. You can also subscribe to the [Environmental Justice ListServ](#) so that you can receive updates on our upcoming EJSCREEN activities.

We look forward to hearing from you – and in the meantime, we hope you find the new version of EJSCREEN as useful as we do!

*About the Author: Matthew Tejada is the Director of EPA's Office of Environmental Justice.*

Message

---

**From:** Germann, Sandy [Germann.Sandy@epa.gov]  
**Sent:** 8/14/2017 6:22:51 PM  
**To:** Letendre, Daisy [letendre.daisy@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Kime, Robin [Kime.Robin@epa.gov]; Walter, Simone [walter.simone@epa.gov]  
**Subject:** RE: For Final Review: EJSCREEN materials

Thanks, will wait to hear from Brittany.

Sandy Germann  
US EPA Office of Policy  
202-631-0272  
[germann.sandy@epa.gov](mailto:germann.sandy@epa.gov)

---

**From:** Letendre, Daisy  
**Sent:** Monday, August 14, 2017 2:09 PM  
**To:** Germann, Sandy <Germann.Sandy@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>  
**Cc:** Kime, Robin <Kime.Robin@epa.gov>; Walter, Simone <walter.simone@epa.gov>  
**Subject:** RE: For Final Review: EJSCREEN materials

I am good with these. Apologies for the delay, just finished reading through.

Samantha is tied up today but I'm looping in Brittany.

---

**From:** Germann, Sandy  
**Sent:** Thursday, August 10, 2017 9:33 AM  
**To:** Letendre, Daisy <letendre.daisy@epa.gov>  
**Cc:** Kime, Robin <Kime.Robin@epa.gov>; Dalbey, Matthew <Dalbey.Matthew@epa.gov>  
**Subject:** For Final Review: EJSCREEN materials

Hi Daisy, Per the note below, OEJ is preparing for release of EJSCREEN next Wed. Matt Dalbey and I have reviewed and commented on the press release and blog. I know Simone sent you earlier drafts, but just wanted to see if you wanted to give the latest products a final look. Please let us know if you or Samantha think any changes are needed. Thank you!

Sandy Germann  
US EPA Office of Policy  
202-631-0272  
[germann.sandy@epa.gov](mailto:germann.sandy@epa.gov)

---

**From:** Senn, John  
**Sent:** Wednesday, August 09, 2017 3:57 PM  
**To:** Grantham, Nancy <Grantham.Nancy@epa.gov>; Germann, Sandy <Germann.Sandy@epa.gov>; Orquina, Jessica <Orquina.Jessica@epa.gov>; Wade, James <Wade.James@epa.gov>; Valentine, Julia <Valentine.Julia@epa.gov>; Lynn, Tricia <lynn.tricia@epa.gov>  
**Cc:** Nguyen, Loan <Nguyen.Loan@epa.gov>  
**Subject:** For OPA/OMR/OWC review: EJSCREEN materials

Hi everyone—as you already know, we are on track to make live a number of updates to EJSCREEN soon (target date is next Wednesday). Attached are our draft release and blog for the announcement, which have both been reviewed and approved by OECA and OP leadership.

And here are a couple messages for the main accounts and one for the OECA Twitter account.

Tweet for main account:

We recently updated our environmental justice mapping tool EJSCREEN with new environmental & demographic data.  
(link to release goes here)

Facebook post for main account:

EPA's environmental justice screening and mapping tool EJSCREEN was recently updated and now includes the most up-to-date environmental and demographic data available, a new water quality indicator, the ability to look at cities and municipalities, and other improvements. (link to release goes here)

Tweet for EPAJustice:

New on our blog: Read about how improvements to our EJSCREEN data tool will benefit a broad range of stakeholders.  
(link to blog goes here)

The EJ office will also send a message to their listserv about the updates, but that language will be drawn from the press release.

FYI, Jess, the update will not include any new web language, just data updates to the tool itself.

Let me know if anyone has any questions or wants to connect on this—thanks,  
John

John Senn  
Acting Communications Director  
Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
(202) 564-8996 - [senn.john@epa.gov](mailto:senn.john@epa.gov)  
<https://twitter.com/EPAJustice>

Message

---

**From:** Letendre, Daisy [letendre.daisy@epa.gov]  
**Sent:** 8/14/2017 6:08:30 PM  
**To:** Germann, Sandy [Germann.Sandy@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Kime, Robin [Kime.Robin@epa.gov]; Walter, Simone [walter.simone@epa.gov]  
**Subject:** RE: For Final Review: EJSCREEN materials  
**Attachments:** PRESS RELEASE Release of 2017 EJSCREEN Update\_8-9-17.docx; [BLOG] Release of 2017 EJSCREEN Update\_8-9-17.docx

I am good with these. Apologies for the delay, just finished reading through.

Samantha is tied up today but I'm looping in Brittany.

---

**From:** Germann, Sandy  
**Sent:** Thursday, August 10, 2017 9:33 AM  
**To:** Letendre, Daisy <letendre.daisy@epa.gov>  
**Cc:** Kime, Robin <Kime.Robin@epa.gov>; Dalbey, Matthew <Dalbey.Matthew@epa.gov>  
**Subject:** For Final Review: EJSCREEN materials

Hi Daisy, Per the note below, OEJ is preparing for release of EJSCREEN next Wed. Matt Dalbey and I have reviewed and commented on the press release and blog. I know Simone sent you earlier drafts, but just wanted to see if you wanted to give the latest products a final look. Please let us know if you or Samantha think any changes are needed. Thank you!

Sandy Germann  
US EPA Office of Policy  
202-631-0272  
[germann.sandy@epa.gov](mailto:germann.sandy@epa.gov)

---

**From:** Senn, John  
**Sent:** Wednesday, August 09, 2017 3:57 PM  
**To:** Grantham, Nancy <[Grantham.Nancy@epa.gov](mailto:Grantham.Nancy@epa.gov)>; Germann, Sandy <[Germann.Sandy@epa.gov](mailto:Germann.Sandy@epa.gov)>; Orquina, Jessica <[Orquina.Jessica@epa.gov](mailto:Orquina.Jessica@epa.gov)>; Wade, James <[Wade.James@epa.gov](mailto:Wade.James@epa.gov)>; Valentine, Julia <[Valentine.Julia@epa.gov](mailto:Valentine.Julia@epa.gov)>; Lynn, Tricia <[lynn.tricia@epa.gov](mailto:lynn.tricia@epa.gov)>  
**Cc:** Nguyen, Loan <[Nguyen.Loan@epa.gov](mailto:Nguyen.Loan@epa.gov)>  
**Subject:** For OPA/OMR/OWC review: EJSCREEN materials

Hi everyone—as you already know, we are on track to make live a number of updates to EJSCREEN soon (target date is next Wednesday). Attached are our draft release and blog for the announcement, which have both been reviewed and approved by OECA and OP leadership.

And here are a couple messages for the main accounts and one for the OECA Twitter account.

Tweet for main account:

We recently updated our environmental justice mapping tool EJSCREEN with new environmental & demographic data. (link to release goes here)

Facebook post for main account:

EPA's environmental justice screening and mapping tool EJSCREEN was recently updated and now includes the most up-to-date environmental and demographic data available, a new water quality indicator, the ability to look at cities and municipalities, and other improvements. (link to release goes here)

Tweet for EPAJustice:

New on our blog: Read about how improvements to our EJSCREEN data tool will benefit a broad range of stakeholders.  
(link to blog goes here)

The EJ office will also send a message to their listserv about the updates, but that language will be drawn from the press release.

FYI, Jess, the update will not include any new web language, just data updates to the tool itself.

Let me know if anyone has any questions or wants to connect on this—thanks,  
John

John Senn  
Acting Communications Director  
Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
(202) 564-8996 - [senn.john@epa.gov](mailto:senn.john@epa.gov)  
<https://twitter.com/EPAJustice>

Message

---

**From:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]  
**Sent:** 5/19/2017 11:48:48 AM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** Fwd: 3 of the 4 stay packages (re landfills and oil and gas)  
**Attachments:** FRN\_Stay\_Proposal\_05-18-2017.docx; ATT00001.htm; 90 day stay - Action Memo.docx; ATT00002.htm; Landfills 90-Day Stay Action Memo.docx; ATT00003.htm

I'll have edits to these that I'll send, but attached are the latest drafts

Sent from my iPhone

Begin forwarded message:

**From:** "Lewis, Josh" <Lewis.Josh@epa.gov>  
**Date:** May 18, 2017 at 4:32:38 PM EDT  
**To:** "Gunasekara, Mandy" <Gunasekara.Mandy@epa.gov>  
**Cc:** "Dunham, Sarah" <Dunham.Sarah@epa.gov>  
**Subject:** 3 of the 4 stay packages (re landfills and oil and gas)

Mandy – as follow up to our conversation earlier please see attached for drafts of 3 of the 4 stay packages (all are going through the formal review process...latest status noted for each):

- (1) 3-month stay for landfills (this draft has cleared OAR review and is with OP for review).
- (2) 3-month stay for oil and gas (this draft just arrived today for Sarah's review)
- (3) proposal for two-year stay for oil and gas (also just arrived today for Sarah's review)



Message

---

**From:** Srinivasan, Gautam [Srinivasan.Gautam@epa.gov]  
**Sent:** 5/15/2017 10:23:29 PM  
**To:** Schwab, Justin [schwab.justin@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Bowman, Liz [Bowman.Liz@epa.gov]; Freire, JP [Freire.JP@epa.gov]  
**Subject:** Filing in Murray Energy case  
**Attachments:** ENV\_DEFENSE-#806761-v1-Murray\_Energy\_v\_\_EPA\_FINAL\_2017-05-15\_EPA\_s\_Filing\_in\_Compliance\_With\_This\_Court\_s\_January\_1\_\_2017\_Order\_(as\_filed).PDF; ATT00001.htm

Attached. Please let me know if you have questions.

+++++

(202) 564-5647 (o)

Personal Phone / Ex. 6 (c)

Begin forwarded message:

**From:** "Jacobi, Patrick R. (ENRD)" <Patrick.R.Jacobi@usdoj.gov>  
**Date:** May 15, 2017 at 5:49:37 PM EDT  
**To:** "Srinivasan, Gautam" <Srinivasan.Gautam@epa.gov>, "Marks, Matthew" <Marks.Matthew@epa.gov>, "Kopits, Elizabeth" <Kopits.Elizabeth@epa.gov>, "McGartland, Al" <McGartland.Al@epa.gov>  
**Cc:** "Neumann, Jennifer Scheller (ENRD)" <Jennifer.Neumann@usdoj.gov>, "Littleton, Matthew (ENRD)" <Matthew.Littleton@usdoj.gov>, "Amaditz, Kenneth (ENRD)" <Kenneth.Amaditz@usdoj.gov>, "Gladstein, Richard (ENRD)" <Richard.Gladstein@usdoj.gov>, "Brown, Laura J.S. (ENRD)" <Laura.J.S.Brown@usdoj.gov>, "Shea, Sonya (ENRD)" <Sonya.Shea@usdoj.gov>, "Hamrick, Ashley (ENRD)" <Ashley.Hamrick@usdoj.gov>, "Smith, Justin (ENRD)" <Justin.Smith@usdoj.gov>  
**Subject:** Murray: Compliance Filing

Please see attached.

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF WEST VIRGINIA  
Wheeling**

MURRAY ENERGY CORPORATION, et al.,	)	
	)	
Plaintiffs,	)	
	)	<b>Civil Action No. 5:14-CV-00039</b>
v.	)	<b>Judge Bailey</b>
	)	
SCOTT PRUITT, Administrator,	)	
United States Environmental Protection Agency,	)	
acting in his official capacity, <sup>1</sup>	)	
	)	
Defendant.	)	

**EPA’S FILING IN COMPLIANCE WITH THIS COURT’S  
JANUARY 11, 2017 ORDER**

**INTRODUCTION**

On January 11, 2017, this Court ordered the United States Environmental Protection Agency (“EPA”) to (1) “[p]repare and submit a § 321(a) evaluation of the coal industry and other entities affected by the rules and regulations affecting the coal mining and power generating industries . . . by no later than July 1, 2017,” and to (2) “submit evidence . . . that EPA has adopted measures to continuously evaluate the loss and shifts in employment which may result from its administration and enforcement of the Clean Air Act[.]” by no later than December 31, 2017. Final Order, ECF No. 314 at 26–27. In addition, this Court ordered EPA “[t]o submit a comprehensive filing detailing the actions the agency is taking to comply with § 321(a) and this Court’s orders within 60 days.” *Id.* at 27 (hereinafter “Compliance Filing”). On February 16, 2017, the parties filed an expedited joint motion to extend the deadlines in the Final Order.

---

<sup>1</sup> Pursuant to Fed. R. Civ. P. 25(d), Administrator Scott Pruitt “is automatically substituted as a party” because he is the successor to former Administrator Gina McCarthy, who was named in Plaintiffs’ Complaint. Catherine McCabe served as Acting Administrator immediately prior to Administrator Pruitt’s confirmation.

Expedited Joint Motion to Extend Deadlines in the January 11 Final Order, ECF No. 326. On February 23, 2017, this Court granted the parties' request to extend the deadline for the Compliance Filing until May 13, 2017,<sup>2</sup> and otherwise denied the expedited joint motion. Order Granting in Part and Denying in Part the Expedited Joint Motion to Extend Deadlines in the January 11 Final Order, ECF No. 327.

EPA has appealed all aspects of the Final Order, and the Fourth Circuit took the case under submission on May 9, 2017. *Murray Energy Corp. v. EPA*, Lead Case No. 16-2432 (4th Cir.). Subject to the reservations and objections presented to the Fourth Circuit, EPA submits this Compliance Filing to comply with the Final Order.

As explained above, this Court required that the Compliance Filing “detail[] the actions the agency is taking to comply with § 321(a) and this Court’s orders.” ECF No. 314 at 27. EPA understands this direction to mean that the Agency must explain its plans to comply with this Court’s July and December deadlines. The evaluation due by July 1, 2017, has two major subcomponents—a retrospective evaluation of actual “coal mines and coal-fired power generators that have closed or reduced employment since January 2009,” *id.* at 26 ¶ 1(a)(iii), and an evaluation of “facilities that are at risk of closure or reductions in employment because of EPA’s regulations and enforcement actions” and associated impacts on communities, families, and subpopulations, *id.* at 26–27 ¶¶ 1(a)(i)–(ii) & (iv).

In the Final Order, this Court provided additional interpretation of the statute, stating that Section 321(a) “requires EPA to answer the particular question of whether the EPA is contributing to specific worker dislocations and plant and mine closures,” and that, “[t]o comply

---

<sup>2</sup> May 13, 2017 was a Saturday.

with § 321(a), EPA must both ‘track and monitor the effects of the Clean Air Act and its implementing regulations on employment,’ and evaluate ‘the cause of specific job dislocations.’” *Id.* at 8–9 (internal citation omitted). This Court concluded that EPA could employ existing methodologies and analytical tools to achieve compliance, describing with favor a voluntary program jointly administered by EPA and the Department of Labor during the 1970s and early 1980s called the Economic Dislocation Early Warning System (“EDEWS”). *Id.* at 9.

The EDEWS<sup>3</sup> was an information collection and reporting effort in which EPA regional offices maintained contacts with federal, state, and local environmental enforcement offices, and invited individual firms to contact EPA directly when they closed or planned to close a plant and environmental regulations were alleged to be a significant factor in the decision. EPA headquarters consolidated the information collected by the regional offices and communicated it to the Secretary of Labor in a quarterly report. The quarterly reports presented details on the previous quarter’s actual and threatened plant closures, including the name and location of each plant, the industry, the actual or threatened date of dislocation, the jobs lost or threatened and total employment, a description of the environmental regulation or enforcement action at issue, and any unique circumstances involved. EPA did not include in the EDEWS plant closures or employment reductions affecting fewer than 25 employees, but otherwise included all plants that firms alleged would have remained unthreatened had it not been for the imposition of environmental regulations, regardless of the number and significance of other financial factors that may have entered into the closure decision. EPA cautioned, however, that many of the plants included in the EDEWS reports likely would have closed in the near term even in the absence of

---

<sup>3</sup> *Hearings before the Subcomms. of the S. Comm. on Appropriations on H.R. 9375*, 95th Cong. 501–03 (1978) (describing “The Origin & Operation of the Economic Dislocation Early Warning System”), <https://babel.hathitrust.org/cgi/pt?id=uc1.b4682130:view=lup:seq=509>.

environmental regulations. EPA also explained that economic impacts were difficult to quantify because many dislocated workers are rehired by the same firm, while some displaced labor shifted into other firms or sectors of the economy. Finally, EPA identified a number of reliability concerns associated with the EDEWS, including the difficulty of obtaining information to substantiate or refute allegations that environmental regulations were a significant factor in a plant closure.

As explained in more detail below, absent relief from the Fourth Circuit, EPA intends to use the EDEWS as guidance in complying with this Court's July deadline. EPA also intends to comply with this Court's December deadline by using the EDEWS as a starting point to develop an ongoing program to conduct facility-level evaluations of closures and employment reductions. EPA maintains its position, however, that "resuming the [EDEWS] . . . would entail enormous costs to EPA and industry with little or no gain in reliable information." United States' Response to the October 17, 2016 Memorandum Opinion and Order Requiring Section 321(a) Compliance Plan and Schedule, ECF No. 296 at 10 n.11. Furthermore, EPA continues to have serious concerns about the analytical challenges associated with facility-level evaluations generally. *See id.* at 9–10 (listing challenges). EPA will make best efforts to address those challenges, as time and resources permit, because EPA is committed to ensuring that its work is based on the best available science and technical methods. EPA is also committed to an open, transparent process

that affords sufficient opportunities for public engagement, and that adheres to federal data-quality<sup>4</sup> and information-collection<sup>5</sup> requirements and policies.

# **I. July 1, 2017 Evaluation of Coal Mines and Coal-Fired Power Plants**

Under this Court's Final Order, EPA must:

Prepare and submit to the Court a § 321(a) evaluation of the coal industry and other entities affected by the rules and regulations affecting the coal mining and power generating industries as expeditiously as practicable and by no later than July 1, 2017, which evaluation shall:

- (i) identify those facilities that are at risk of closure or reductions in employment because of EPA's regulations and enforcement actions impacting coal and/or the power generating industry;
- (ii) evaluate the impacts of the potential loss and shifts in employment which may be attributable to EPA's regulations and enforcement actions impacting coal and/or the power generating industry, including identifying the number of employees potentially affected, the communities that may be impacted, and the reasonably foreseeable impacts on families and industries reliant on coal;
- (iii) identify those coal mines and coal-fired power generators that have closed or reduced employment since January 2009 and, for each, evaluate whether EPA's administration and enforcement of the Clean Air Act contributed to the closure or reduction in employment; and
- (iv) identify those subpopulations at risk of being unduly affected by job loss and shifts and environmental justice impacts.

---

<sup>4</sup> See, e.g., Information Quality Act, Pub. L. No. 106-554, 114 Stat. 2763; Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, Final Guidelines (corrected), 67 Fed. Reg. 8452 (Feb. 22, 2002); see also U.S. EPA, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency* (Oct. 2002), <https://www.epa.gov/sites/production/files/2015-08/documents/epa-info-quality-guidelines.pdf>.

<sup>5</sup> See, e.g., Paperwork Reduction Act, 44 U.S.C. §§ 3501–21; Office of Info. & Regulatory Affairs, Office of Mgmt. & Budget, Exec. Office of the President, *Frequently Asked Questions*, [https://www.reginfo.gov/public/jsp/Utilities/faq.jsp#icr\\_info](https://www.reginfo.gov/public/jsp/Utilities/faq.jsp#icr_info) (last visited May 15, 2017) (“The Paperwork Reduction Act (PRA), which was signed into law in 1980 and reauthorized in 1995, provides the statutory framework for the Federal government’s collection, use, and dissemination of information. The goals of the PRA include (1) minimizing paperwork and reporting burdens on the American public and (2) ensuring the maximum possible utility from the information that is collected.”).

ECF No. 314 at 26–27.

To comply with this portion of the Final Order, EPA is: (1) assembling a workgroup and establishing a work plan for completing the prescribed evaluation by the July deadline; (2) developing a methodology for evaluating employment impacts at individual coal mines and coal-fired power plants, notwithstanding data gaps and uncertainties; (3) identifying the universe of mines and plants that will be included in the evaluation; and (4) identifying the factors that may have contributed to the actual and potential closures and employment reductions, as well as associated impacts. This workgroup consists of over 80 EPA staff, including economists and program analysts from EPA’s Office of Policy and Office of Air and Radiation, and attorneys in EPA’s Office of General Counsel and Office of Enforcement and Compliance Assurance.

In accordance with the Final Order, EPA’s coal-industry evaluation will focus on employment impacts at the facility level, which is a more granular approach than EPA generally uses in its regulatory analyses of national, regional, and sector-wide economic impacts. While EPA is using the EDEWS approach as guidance for this evaluation, EPA cannot acquire information related to plant closures and employment reductions through interactions with state and local governments or firms by the July deadline due to the requirements of the Paperwork Reduction Act (“PRA”) of 1995. *See infra* at 13. EPA is instead undertaking a significant data-gathering effort by utilizing publicly available<sup>6</sup> information on facilities in the coal-mining and coal-fired-generation industries, compiling that information, and then conducting a qualitative assessment of the factors that may have contributed to actual or potential closures or reductions in employment.

---

<sup>6</sup> At this time, EPA has not identified any proprietary data, such as confidential business information (“CBI”), that has been comprehensively collected and that would be useful for the purpose of conducting facility-level evaluations.

To identify coal mines that have closed or reduced employment since January 2009, EPA is relying on publicly available data from the U.S. Mine Safety and Health Administration (“MSHA”), an agency within the Department of Labor. For the purpose of enforcing mine-worker safety, MSHA collects employment data from entities that engage not just in coal mining, but in “the work of preparing” coal.<sup>7</sup> These entities include mines that produce coal, as well as other types of facilities, such as coal-preparation facilities, coal transshipment facilities, and portable operations (e.g., portable augers). They submit quarterly employment data to MSHA using Form 7000-2,<sup>8</sup> including the average number of workers employed at each entity. Due to the large number of coal mines and related entities in the United States (2,639 steam-coal mines had on-site employment in one or more years from 2009 to 2016)<sup>9</sup> and the fluctuating nature of employment in this sector (e.g., workers are routinely reallocated across mines), EPA is following a methodological approach similar to that used in the EDEWS of evaluating only those entities that experienced dislocations of 25 jobs or more from January 2009 to December 2016. At this time, EPA has identified 1,099 steam-coal mining entities that meet this criterion. For the remaining steam-coal mining entities that experienced smaller reductions in employment, EPA will list such entities and provide a general overview of employment trends and impacts, but will not conduct individual facility-level evaluations.

---

<sup>7</sup> 30 C.F.R. § 50.2(b).

<sup>8</sup> See Mine Safety and Health Admin., U.S. Dep’t of Labor, *Quarterly Mine Employment and Coal Production Report*, <https://www.msha.gov/support-resources/forms-online-filing/2015/04/15/quarterly-mine-employment-and-coal-production> (last visited May 15, 2017).

<sup>9</sup> Steam coal includes bituminous, subbituminous, and lignite coals, which are burned in coal-fired power plants to produce electricity. Some coal mines produce anthracite coal, which is used for steelmaking and other industrial processes. Due to significant time and resource constraints, EPA will address employment impacts at anthracite coal mines as part of the comprehensive program required by this Court’s December deadline.



To identify coal-fired power plants that have closed or reduced employment since January 2009, EPA is relying on publicly available data from the U.S. Energy Information Administration (“EIA”), the Federal Energy Regulatory Commission (“FERC”), and the U.S. Department of Agriculture’s Rural Utilities Service (“RUS”). In contrast to mines, annual employment information is not available for all power plants in the United States, although it is available for many. FERC Form No. 1<sup>10</sup> is a comprehensive financial and operating report submitted annually by major electric utilities that provide rate-based electricity. FERC Form No. 1 solicits total annual employment information for power plants with greater than 25 megawatts of installed capacity. Similarly, power plants that receive insured loans and loan guarantees through the RUS must report their total employment annually on the Financial and Operating Report Electric Power Supply form.<sup>11</sup> Additionally, EPA is attempting to identify those power plants with coal-fired units that have closed or converted to another fuel since January 2009 by relying on publicly available data reported to the EIA using Form 860.<sup>12</sup> At this time, EPA has invested significant effort in reviewing these data sources and identifying coal-fired power plants where at least one operable electric generating unit retired or converted some coal-fired capacity to other fuels between January 2009 and December 2016, or that reduced employment over this time period.

---

<sup>10</sup> See Fed. Energy Regulatory Comm’n, U.S. Dep’t of Energy, *FERC Financial Report, FERC Form No. 1: Annual Report of Major Electric Utilities, Licensees, and Others and Supplemental Form 3-Q: Quarterly Financial Report*, [www.ferc.gov/docs-filing/forms/form-1/form-1.pdf](http://www.ferc.gov/docs-filing/forms/form-1/form-1.pdf) (last visited May 15, 2017).

<sup>11</sup> See Rural Dev., U.S. Dep’t of Agric., *Financial and Operating Report Electric Power Supply* (Rev. 2010), [https://www.rd.usda.gov/files/OpRpt\\_PS\\_2010\\_Current.pdf](https://www.rd.usda.gov/files/OpRpt_PS_2010_Current.pdf).

<sup>12</sup> See U.S. Energy Info. Admin., *Form EIA-860 detailed data* (Oct. 6, 2016), <https://www.eia.gov/electricity/data/eia860/>.

To identify coal-fired power plants that may be at risk of closing or reducing employment in the near future, EPA is using publicly available information regarding retirement plans, which is also available from EIA Form 860. Because comparable data is not available for coal mines,<sup>13</sup> EPA will make best efforts to link these power plants to the coal mines that have consistently supplied them with coal in recent years by using data collected by the EIA on Form 923.<sup>14</sup> The utility of this approach to identifying at-risk coal mines may be limited, however, because power plants often purchase coal from multiple coal mines or through brokers, in which case the original source mine is unknown or difficult to ascertain, and coal mines often have a portfolio of customers that can vary from year to year. Nevertheless, absent a peer-reviewed methodology for identifying at-risk facilities, EPA believes that this approach, despite its limitations, is the best option for timely complying with this Court's Final Order. EPA is aware that identifying a coal mine as "at risk" could in itself create additional financial risk to the owners, suppliers, and employees of that mine.<sup>15</sup> Consequently, EPA will seek to minimize that risk while complying with the requirements of the Final Order.

To evaluate whether EPA's administration and enforcement of the Clean Air Act may have contributed to any of the actual and potential closures and employment reductions, EPA will rely on official statements made by facility owners (e.g., annual reports, SEC filings, and

---

<sup>13</sup> In certain circumstances, coal-mine owners may be required to submit notices under the Worker Adjustment and Retraining Notification ("WARN") Act to MSHA. WARN Act requirements are limited to firms of a certain size, however, and these firms are usually only required to issue notices 60 days in advance, which limits the utility of the notices in identifying potential closures.

<sup>14</sup> See *U.S. Energy Info. Admin., Form EIA-923 detailed data* (Apr. 26, 2017), <https://www.eia.gov/electricity/data/eia923/>.

<sup>15</sup> For example, an "at risk" designation could affect a facility's credit rating, making it more difficult for the facility to obtain loans from lenders. Similarly, an "at risk" designation could impede a facility's ability to attract skilled workers, who may be more inclined to seek employment at a competitor not designated as "at risk."

press releases) and information gathered through news-collection services (e.g., Newsbank) and other sources (e.g., WARN Act notices). EPA emphasizes that these statements cannot be fully corroborated through independent investigation or financial analysis in the time provided by the Final Order. For each facility, EPA is also consulting its own publicly available enforcement databases (e.g., EPA's ECHO database)<sup>16</sup> and, where appropriate, databases that contain information related to the enforcement of health and safety regulations (e.g., databases maintained by MSHA for coal mines) and state and local regulations. Based on work done to date, EPA estimates that each draft coal-mine and power-plant evaluation will take between one and five hours to complete, depending on the amount of information available.

For the at-risk facilities, EPA is gathering information on current economic, health, and environmental conditions in the areas in which the facilities are located in order to evaluate potential impacts on “communities,” “families and industries reliant on coal,” and “those subpopulations at risk of being unduly affected by job loss and shifts from environmental justice impacts.” ECF No. 314 at 26–27. To do this, EPA is relying on publicly available data from the U.S. Census Bureau, the U.S. Bureau of Labor Statistics (“BLS”), the Centers for Disease Control and Prevention, EPA's EJSCREEN tool,<sup>17</sup> and other relevant sources. Employment-

---

<sup>16</sup> ECHO stands for “Enforcement and Compliance History Online.” See U.S. EPA, *Learn More About ECHO*, <https://echo.epa.gov/resources/general-info/learn-more-about-echo> (last updated Feb. 8, 2017). The database provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide. *Id.*

<sup>17</sup> EJSCREEN is EPA's “Environmental Justice Screening and Mapping Tool,” which is used for displaying and combining nationally consistent, publicly available environmental and demographic data at various geographic scales. See U.S. EPA, *EJSCREEN: Environmental Justice Screening and Mapping Tool*, <https://www.epa.gov/ejscreen> (last updated Dec. 19, 2016).

related indicators are generally available by Labor Market Area (“LMA”),<sup>18</sup> whereas environmental and health indicators are typically available at the county or state level.

In regards to the format of the July submission, EPA expects that each facility-specific evaluation will present facility-related information, a narrative summarizing the information that EPA found regarding job losses and shifts and the factors that may have contributed to the actual or potential closure or reduction in employment, and EPA’s best assessment, in light of available data and methodologies, of whether EPA’s administration and enforcement of the Clean Air Act is among those factors. For at-risk facilities, the evaluations will also include the community-impacts information discussed above. Based on work done to date, EPA estimates that each draft community-impacts evaluation will take between two and five hours to complete, depending on the amount of information available.

Finally, EPA will include in the submission to this Court sector-level overviews of the coal-mining and electricity-generating industries that discuss recent regulatory requirements, labor trends, and major factors affecting the cost of extracting coal and the electricity sector’s demand for coal. Given the numerous analytical limitations and challenges associated with a facility-level approach, EPA believes that concurrent sector-level overviews are important to provide context for the broader economic and regulatory forces that affect employment in these industries. EPA is relying on external market assessments, publicly available market and survey data, and recent scientific research to complete the overviews.

---

<sup>18</sup> LMAs are U.S. Office of Management and Budget (“OMB”)-defined metropolitan and micropolitan areas, as well as BLS-defined small labor market areas. LMAs represent geographic areas where individuals can live and work within a reasonable distance. They can include multiple counties and can cross state lines. They are non-overlapping and geographically exhaustive for the entire United States. Many LMAs are county equivalents.

## **II. Measures to Continuously Evaluate Losses and Shifts in Employment**

Under this Court's Final Order, EPA also must:

[A]s expeditiously as practicable, but by no later than December 31, 2017, submit evidence to the Court demonstrating that EPA has adopted measures to continuously evaluate the loss and shifts in employment which may result from its administration and enforcement of the Clean Air Act, including such rulemakings, guidance documents, and internal policies as necessary to demonstrate that EPA has begun to comply with § 321(a) and will continue to do so going forward.

ECF No. 314 at 27.

To comply with this portion of the Final Order, EPA is assembling a workgroup and establishing a work plan to adopt measures by the December deadline. This workgroup currently consists of over 30 EPA staff, including economists and program analysts from EPA's Office of Policy and Office of Air and Radiation, attorneys in EPA's Office of General Counsel and Office of Enforcement and Compliance Assurance, and assistance from other EPA headquarters offices as needed.

The first step in EPA's work plan is to develop a system for collecting facility-level information. As explained above, the EDEWS program relied heavily on assistance from state and local authorities, as well as direct communication with firms, to identify facilities potentially threatened by environmental regulations. Each EPA regional office had a staff member responsible for maintaining contacts with federal, state, and local environmental enforcement offices, as well as local departments of commerce; reading the local press; and serving as the regional point-of-contact for individual firms that contacted EPA regarding closures or plans to close. For each facility, the regional staff member collected the facility's name, location, and industry; the date (if known) of the closure or reduction in employment; the environmental regulation or enforcement action at issue; evidence in support of the firm's claims (e.g., abatement cost information); and any unique circumstances involved.

For EPA to implement a similar information-collection system today, either by directly soliciting information from firms or by indirectly obtaining information with the assistance of state and local entities, EPA must comply with the PRA.<sup>19</sup> Generally, to comply with the PRA, EPA must seek public comment on proposed information collections and submit proposed information collections to OMB for review and approval. Any information collection request (“ICR”) submitted to OMB for review and approval must include a description of the collection and its intended use, as well as an estimate of the time and cost burdens the ICR will place on the public. 44 U.S.C. § 3506(c)(1)(a); 5 C.F.R. § 1320.8(b) & (c). The ICR may also include an information collection instrument (e.g., a form, survey, script, etc.) and supporting documentation that addresses matters like reporting frequency, the format of the electronic collection system, access issues, and CBI concerns. The ICR process requires two Federal Register notices. The first notice announces EPA’s plan to submit an ICR to OMB and solicits comments for a period of 60 days. 44 U.S.C. § 3506(c)(2)(a); 5 C.F.R. § 1320.8(d). The second notice announces that the ICR has been submitted to OMB and solicits comment for 30 days. 44 U.S.C. § 3507(a)(1)(D) & (b); 5 C.F.R. § 1320.10(a). OMB has 60 days from either the date on which the ICR is submitted for review or the date on which the second notice is published, whichever is later, to approve, disapprove, or require changes to the ICR. 44 U.S.C. § 3507(c)(2); 5 C.F.R. § 1320.10(b). The total ICR process takes approximately six to nine months from beginning to end.<sup>20</sup>

---

<sup>19</sup> Congress enacted the PRA in 1980, nine years after EPA and the Department of Labor started EDEWS, and substantially revised it in 1995.

<sup>20</sup> See Office of Info. & Regulatory Affairs, Office of Mgmt. & Budget, Exec. Office of the President, *Questions and Answers When Designing Surveys for Information Collections* 3 (Jan. 2006), [https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/pmc\\_survey\\_guidance\\_2006.pdf](https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/pmc_survey_guidance_2006.pdf)

The second step in EPA's work plan is to develop a process for compiling and evaluating the information once it has been collected. In broad terms, this process will likely be similar to the one that EPA is using to conduct facility-level evaluations of coal mines and coal-fired power plants by the July deadline, except that the process will be ongoing and subject to improvements and adjustments over time. While EPA will continue to evaluate actual and potential closures and reductions in employment for the coal industry, EPA will also evaluate additional sectors in the economy that may be affected by Clean Air Act regulations and enforcement actions.<sup>21</sup> EPA intends to compile the facility-level information necessary to conduct evaluations into a database and review the information for quality-control purposes. Finally, to the extent practicable, EPA will seek to address the serious analytical challenges and limitations associated with the EDEWS methodology by using a transparent process that effectively engages the public and outside experts.

The third step in EPA's work plan is to determine whether and how the Agency will disseminate the evaluations to the public. While Section 321(a) does not require EPA to disclose its evaluations to the public, EPA is nevertheless considering the feasibility and benefits of various options for public dissemination. As described above, EPA used the EDEWS to generate quarterly reports that were submitted to the Department of Labor and the Small Business Administration to aid those agencies in providing unemployment assistance and loans for abatement equipment, respectively. EPA also distributed copies of the quarterly reports to about

---

("A six month period, from the time the agency completes the ICR to OMB approval, is fairly common for planning purposes but varies considerably across agencies depending on internal review procedures.").

<sup>21</sup> EPA notes that, while there is a relatively large amount of economic data regarding the coal-mining and electricity-generating sectors that is routinely generated and submitted to various federal, state, and local agencies, comparable data is not readily available for many other sectors subject to Clean Air Act regulation.

100 people outside the Agency, ranging from professors at universities, to companies on a mailing list, to other Federal agencies.<sup>22</sup> The Council on Environmental Quality (“CEQ”) also included EDEWS information in several of its annual reports during the 1970s.<sup>23</sup> At this time, EPA has not determined whether any of these historical examples would be an appropriate way to disseminate evaluations today.

### CONCLUSION

While reserving all rights and without prejudice to the EPA’s appeal of this Court’s Final Order, the EPA responds to the Final Order and submits, as directed, this Compliance Filing.

DATED: May 15, 2017

Respectfully Submitted,

JEFFREY H. WOOD  
Acting Assistant Attorney General  
U.S. Department of Justice  
Environment & Natural Resources Division

/s/ Patrick R. Jacobi  
PATRICK R. JACOBI  
RICHARD GLADSTEIN  
SONYA SHEA  
LAURA J. BROWN  
U.S. Department of Justice  
Environment & Natural Resources Division  
Environmental Defense Section  
601 D Street, N.W., Suite 8000  
Washington, D.C. 20004  
(202) 514-2398 (Jacobi)  
(202) 514-1711 (Gladstein)

---

<sup>22</sup> See Nat’l Comm’n on Supplies and Shortages, *Information Systems Studies* 401 (Dec. 1976), <https://babel.hathitrust.org/cgi/pt?id=uc1.31210024827345;view=lup;seq=415>.

<sup>23</sup> See Council on Env’tl. Quality, Exec. Office of the President, *Annual Environmental Quality Reports*, [https://ceq.doe.gov/ceq-reports/annual\\_environmental\\_quality\\_reports.html](https://ceq.doe.gov/ceq-reports/annual_environmental_quality_reports.html) (last visited May 15, 2017). In 1995, Congress eliminated the requirement that CEQ create and publish the annual reports to reduce paperwork in government. *See id.*



(202) 514-2741 (Shea)  
(202) 514-3376 (Brown)  
patrick.r.jacobi@usdoj.gov  
richard.gladstein@usdoj.gov  
sonya.shea@usdoj.gov  
laura.j.s.brown@usdoj.gov

BETSY STEINFELD JIVIDEN  
Acting United States Attorney for the  
Northern District of West Virginia

/s/ Erin Carter Tison  
ERIN CARTER TISON (WV Bar No.  
12608)  
Assistant United States Attorney  
U.S. Courthouse & Federal Bldg.  
1125 Chapline Street Suite 3000  
Wheeling, W.V. 26003  
(304) 234-0100  
erin.tison@usdoj.gov

OF COUNSEL:  
MATTHEW C. MARKS  
United States Environmental Protection  
Agency  
Office of General Counsel  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460  
(202) 564-3276  
marks.matthew@epa.gov

**IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF WEST VIRGINIA  
Wheeling**

MURRAY ENERGY CORPORATION, et al.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	<b>Civil Action No. 5:14-CV-00039</b>
	)	<b>Judge Bailey</b>
SCOTT PRUITT, Administrator,	)	
United States Environmental Protection Agency,	)	
acting in his official capacity,	)	
	)	
Defendant.	)	

**CERTIFICATE OF SERVICE**

I, Erin Carter Tison, hereby certify that on this 15th day of May, 2017, the foregoing EPA's Filing in Compliance With This Court's January 11, 2017 Order was filed using the CM/ECF system, which will cause a copy to be served upon counsel of record.

/s/ Erin Carter Tison  
ERIN CARTER TISON (WV Bar No. 12608)  
Assistant United States Attorney  
U.S. Courthouse & Federal Bldg.  
1125 Chapline Street Suite 3000  
Wheeling, W.V. 26003  
(304) 234-0100  
erin.tison@usdoj.gov

Message

---

**From:** Kime, Robin [Kime.Robin@epa.gov]  
**Sent:** 6/27/2017 8:02:25 PM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]  
**CC:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** FYI- Here for interagency review- DOI/BLM NPRM for EPA Review: "Rescission of a 2015 Rule: Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands"  
**Attachments:** Draft.EA\_Rescind.HF.Rule 6.5.17\_Clean\_To OIRA.DOCX; BLM\_Draft\_NPRM\_Rescind HF Rule\_To OIRA\_6.15.17.docx; Draft RIA Rescind HF Rule 6.5.17\_To OIRA.DOCX

Nothing is needed. Sharing this for your awareness: The draft BLM rule and RIA is with EPA for review. Stuart (below) works for Sarah Rees. He and I share these interagency review documents with subject matter experts in ORPM and NCEE for comment. They have reviewed this and have no comments. If they did, we would give them to you to review prior to submitting to, in this case, Robin Richardson in OCIR. Robin will collect all comments, review and elevate prior to sending the agency's comments to OMB (due this Friday). I can ask Sarah to give you more background on this review process but wanted to touch base briefly here.

---

**From:** Miles-McLean, Stuart  
**Sent:** Wednesday, June 21, 2017 10:29 AM  
**To:** McGartland, Al <McGartland.Al@epa.gov>; Bowen, Jennifer <Bowen.Jennifer@epa.gov>; Snyder, Brett <Snyder.Brett@epa.gov>; Marten, Alex <Marten.Alex@epa.gov>  
**Cc:** Kime, Robin <Kime.Robin@epa.gov>  
**Subject:** Additional Document for Review RE: Comments due 3:00 p.m. 6/27 please- DOI/BLM NPRM for EPA Review: "Rescission of a 2015 Rule: Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands"

Hi NCEE Folks:

We received from OMB the attached draft environmental assessment for the subject rule. Comments on this document are due at the same time as those on the draft NPRM and RIA, that is: 3:00 pm Tuesday, 06/27.

Thank you, Stuart

---

**Stuart Miles-McLean** | Office of Regulatory Policy & Management | Office of Policy | Office of the Administrator  
202.564.6581 | 3512J WJC North | Mail Code 1803 | 1200 Pennsylvania Avenue NW | Washington, DC 20460

Message

---

**From:** Schwab, Justin [schwab.justin@epa.gov]  
**Sent:** 5/23/2017 2:45:14 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** FR proposals for stay of landfills, OOOOa - redline and notes from yesterday's meeting  
**Attachments:** 5-23 EDIT LANDFILLS FR Notice\_Long Term Stay\_05-19-17 FINAL.docx; 5-23 EDIT OOOOa FRN\_Stay\_Proposal\_05-22-2017v2\_Clean.docx

Mandy, Samantha, and Brittany-

Please review the below and attached to ensure it reflects your understanding of yesterday's meeting.

Once you have reviewed and approved, it will be ready for you to send through OAR (and in due course ARLO) for rewrite.

(Note that there is one question specific to ARLO regarding the consent decree underlying the landfill rulemaking.)

**NB – I obtained these files from Sarah Rees, who suggested that Mandy/Sarah D. may have changed them somewhat. I do not have word files reflecting whatever changes MG/SD may have made.**

\*\*

Please find documents attached incorporating the line-specific notes from yesterday's meeting.

The notes below and the comments in the attached documents should be provided to OAR/ARLO for rewrite.

**Deliberative Process / Ex. 5**

Message

---

**From:** Owens, James (OST) [j.owens@dot.gov]  
**Sent:** 7/21/2017 4:04:39 PM  
**To:** Catanzaro, Michael J. EOP/WHO; **EOP / Ex. 6**; Baptist, Erik [baptist.erik@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Smith, Loren (OST) [Loren.Smith@dot.gov]  
**Subject:** NHTSA EIS notice for CAFE  
**Attachments:** MY 2022-25 CAFE NHTSA Notice of Intent\_7-20-2017.docx

Mike, Erik, and Brittany:

For your situational awareness, attached is the EIS scoping notice for the next round of CAFE rulemaking that NHTSA is submitting to the Federal Register today. Our career staff separately shared it with EPA's careers, but I wanted to be sure that each of you had a copy as well. As a reminder, this notice is targeted at MY 2022-25 (which do not have existing CAFE standards), but also includes a possible revisiting of the existing MY 2021 standards.

Please don't hesitate to let me know if you have any questions.

Best,  
-James

\*\*\*

James C. Owens  
U.S. Department of Transportation  
Office: W94-320  
Email: [j.owens@dot.gov](mailto:j.owens@dot.gov)  
Cell: **Personal Phone / Ex. 6**  
Office: (202) 366-7071

**DEPARTMENT OF TRANSPORTATION**

**National Highway Traffic Safety Administration**

**Docket No. NHTSA-2017-0069**

**Notice of Intent to Prepare an Environmental Impact Statement for Model Year  
2022–2025 Corporate Average Fuel Economy Standards**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

**ACTION:** Notice of intent to prepare an environmental impact statement; request for scoping comments.

**SUMMARY:** In accordance with the National Environmental Policy Act (NEPA), NHTSA intends to prepare an environmental impact statement (EIS) to analyze the potential environmental impacts of new Corporate Average Fuel Economy (CAFE) standards for model year (MY) 2022–2025 passenger automobiles (referred to herein as “passenger cars”) and non-passenger automobiles (referred to herein as “light trucks”) that NHTSA will be proposing pursuant to the Energy Policy and Conservation Act of 1975 (EPCA), as amended by the Energy Independence and Security Act of 2007 (EISA). This notice initiates the process for determining the scope of considerations to be addressed in the EIS and for identifying any significant environmental matters related to the proposed action. NHTSA invites public comments from Federal, State, and local agencies, Indian tribes, stakeholders, and the public in this scoping process to help identify and focus any matters of environmental significance and reasonable alternatives to be examined in the EIS.

**DATES:** The scoping process will culminate in the preparation and issuance of a Draft EIS, which will be made available for public comment concurrently with the issuance of a Notice of Proposed Rulemaking (NPRM). To ensure that NHTSA has an opportunity to fully consider scoping comments, scoping comments should be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. NHTSA will consider comments received after that date to the extent the rulemaking schedule allows.

**ADDRESSES:** You may submit comments to the docket number identified in the heading of this document by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- *Mail:* Docket Management Facility, M-30, U.S. Department of Transportation, West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590.
- *Hand Delivery or Courier:* U.S. Department of Transportation, West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m. Eastern time, Monday through Friday, except Federal holidays.
- *Fax:* 202-493-2251.

Regardless of how you submit your comments, you must include the docket number identified in the heading of this notice. Note that all comments received, including any personal information provided, will be posted without change to <http://www.regulations.gov>. Please see the “Privacy Act” heading below.

You may call the Docket Management Facility at 202-366-9324.

*Docket:* For access to the docket to read background documents or comments received, go to <http://www.regulations.gov> or the street address listed above. We will continue to file relevant information in the Docket as it becomes available.

*Privacy Act:* In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to <http://www.regulations.gov>, as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at <https://www.transportation.gov/privacy>. Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

**FOR FURTHER INFORMATION CONTACT:** For technical issues, contact Ken Katz, Fuel Economy Division, Office of International Policy, Fuel Economy, and Consumer Programs, telephone: 202-366-4936, e-mail: [Ken.Katz@dot.gov](mailto:Ken.Katz@dot.gov); for legal issues, contact Russell Krupen, Legislation & General Law Division, Office of the Chief Counsel, telephone: 202-366-1834, e-mail: [Russell.Krupen@dot.gov](mailto:Russell.Krupen@dot.gov), at the National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590.

**SUPPLEMENTARY INFORMATION:** In a forthcoming NPRM, NHTSA intends to propose CAFE standards for MY 2022–2025 passenger cars and light trucks pursuant to EPCA (Pub. L. No. 94-163, 89 Stat. 871 (Dec. 22, 1975)), as amended by EISA (Pub. L.



No. 110-140, 121 Stat. 1492 (Dec. 19, 2007)).<sup>1</sup> In connection with this action, NHTSA will prepare an EIS to analyze the potential environmental impacts of the proposed CAFE standards and reasonable alternative standards pursuant to NEPA (42 U.S.C. §§ 4321–4347) and implementing regulations (40 CFR Parts 1500–1508) issued by the Council on Environmental Quality (CEQ), DOT Order No. 5610.1C (*Procedures for Considering Environmental Impacts* (1979) (revised 1985), *available at* <https://www.transportation.gov/office-policy/transportation-policy/procedures-considering-environmental-impacts-dot-order-56101c>), and NHTSA regulations (49 CFR part 520). NEPA instructs Federal agencies to consider the potential environmental impacts of their proposed actions and those of possible alternative actions. 42 U.S.C. § 4332(2)(C). To inform decisionmakers and the public, the EIS will analyze the potential environmental impacts of NHTSA’s preferred alternative, which will correspond to the proposed rule, and a spectrum of reasonable alternatives, including a “no action” alternative. 40 CFR §§ 1502.1, 1502.14. The EIS will consider direct, indirect, and cumulative impacts of the proposed action and alternatives and will discuss impacts in proportion to their significance. *Id.* §§ 1502.2(b), 1508.25(b)–(c).

*Background.* EPCA requires that the Secretary of Transportation<sup>2</sup> establish and implement a regulatory program for motor vehicle fuel economy as part of a comprehensive approach to Federal energy policy. As codified in Chapter 329 of Title 49 of the U.S. Code, and as amended by EISA, EPCA set forth specific requirements concerning the establishment of CAFE standards for passenger cars and light trucks.

---

<sup>1</sup> NHTSA’s fuel economy authorities are codified at 49 U.S.C. §§ 32901 *et seq.*

<sup>2</sup> The Secretary has delegated responsibility for implementing fuel economy requirements under EPCA and EISA to NHTSA. 49 CFR § 1.95(a) and (j).

The Secretary must prescribe average fuel economy standards by regulation at least 18 months before the beginning of each model year and to set them at “the maximum feasible average fuel economy level that . . . the manufacturers can achieve in that model year.” 49 U.S.C. § 32902(a). The standards apply to each manufacturer’s fleet average, not to the manufacturer’s individual vehicles. The Secretary, after consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency (EPA), must establish average fuel economy standards separately for passenger cars and for light trucks manufactured in each model year. *Id.* § 32902(b) (1)–(2). In doing so, for the model years to be addressed in the NPRM, the Secretary of Transportation must set each passenger car and light truck standard at the “maximum feasible” average fuel economy standard for each model year. *Id.* § 32902(b)(2)(B), (f). When setting “maximum feasible” average fuel economy standards, the Secretary must “consider technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy.” *Id.* § 32902(f). NHTSA construes the aforementioned statutory factors as including environmental and safety considerations.<sup>3</sup>

The standards for passenger cars and light trucks must be “based on 1 or more vehicle attributes related to fuel economy” and expressed “in the form of a mathematical function,” and they may be established for not more than five model years at a time. 49 U.S.C. § 32902(b)(3)(A)–(B). In addition, each manufacturer must meet the minimum

---

<sup>3</sup> For environmental considerations, see *Center for Auto Safety v. NHTSA*, 793 F.2d 1322, 1325 n. 12 (D.C.Cir. 1986); *Public Citizen v. NHTSA*, 848 F.2d 256, 262-3 n. 27 (D.C.Cir. 1988) (noting that “NHTSA itself has interpreted the factors it must consider in setting CAFE standards as including environmental effects”); *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1196 (9th Cir. 2008); 40 CFR § 1500.6. For safety considerations, see, e.g., *Competitive Enterprise Inst. v. NHTSA*, 956 F.2d 321, 322 (D.C.Cir. 1992) (citing *Competitive Enterprise Inst. v. NHTSA*, 901 F.2d 107, 120 n.11 (D.C.Cir. 1990)).

standard for domestically manufactured passenger cars, which is 92 percent of the projected average fuel economy for the combined domestic and non-domestic passenger car fleet for each model year, calculated at the time the final rule establishing the passenger car standards for those model years is promulgated. *Id.* § 32902(b)(4).

*Regulatory History.* NHTSA set the first fuel economy standards in 1977, applying to passenger cars beginning in MY 1978 and light trucks beginning in MY 1979. The stringency of the standards increased through MY 1985, and then changed little until MY 2005 for light trucks, when NHTSA reformed the light truck fuel economy program by introducing attribute-based standards, and MY 2011 for passenger cars, when NHTSA introduced attribute-based standards for passenger cars using new authority provided by EISA. CAFE standards have increased progressively for light trucks since MY 2005 and for passenger cars since MY 2011.

More recently, NHTSA has conducted its fuel economy rulemaking jointly with EPA's rulemaking to establish greenhouse gas (GHG) emission standards. In April 2010, NHTSA and EPA issued a joint final rule establishing fuel economy standards and GHG emissions standards<sup>4</sup> for MY 2012–2016 passenger cars and light trucks. *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule*, 75 FR 25323 (May 7, 2010). The CAFE standards were estimated to require a combined average fleet-wide fuel economy of 34.1 miles per gallon (mpg) by MY 2016.<sup>5</sup> Subsequently, on August 28, 2012, NHTSA and EPA issued a final

---

<sup>4</sup> EPA issued GHG emissions standards pursuant to the Clean Air Act. *See* 42 U.S.C. § 7521(a).

<sup>5</sup> The EPA GHG standards were estimated to require a combined average fleet-wide level of 250 grams/mile CO<sub>2</sub>-equivalent for MY 2016, which is equivalent to 35.5 mpg if all of the technologies used to reduce GHG emissions were tailpipe CO<sub>2</sub> reducing technologies. The 250 g/mi CO<sub>2</sub> equivalent level assumed the use of credits for air conditioning improvements worth 15 g/mi in MY 2016.

rule setting CAFE and GHG emissions standards for passenger cars and light trucks for model years 2017 and beyond. *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*, 77 FR 62623 (Oct. 15, 2012). Consistent with its statutory authority, NHTSA developed two phases of passenger car and light truck standards. The first phase, covering MYs 2017–2021, included final standards that were projected to require, on an average industry fleet wide basis, a range from 40.3–41.0 mpg in MY 2021. The second phase of the CAFE program, covering MYs 2022–2025, included standards that were not final, due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. Rather, NHTSA wrote that those standards were “augural,” meaning that they represented its best estimate, based on the information available at that time, of what levels of stringency might be maximum feasible in those model years. NHTSA projected that those standards could require, on an average industry fleet wide basis, a range from 48.7–49.7 mpg in model year 2025.

As part of the final rulemaking, EPA committed to conducting a Mid-Term Evaluation of its GHG standards established for MYs 2022–2025. As NHTSA did not issue final CAFE standards for MYs 2022–2025 in its 2012 final rule, it does not have any standards for those MYs to be evaluated. Instead, NHTSA is obligated to conduct a *de novo* rulemaking, with fresh inputs and a fresh consideration and balancing of all relevant factors, to establish final CAFE standards for those MYs. Meanwhile, EPA’s regulations require it to determine whether the GHG standards for MYs 2022–2025 are appropriate under section 202(a) of the Clean Air Act, in light of the record then before the Administrator. 40 CFR § 86.1818-12(h).

In July 2016, NHTSA, EPA, and the California Air Resources Board released for public comment a jointly prepared Draft Technical Assessment Report (TAR), which examined a range of matters relevant to CAFE and GHG emissions standards for MYs 2022–2025. *Notice of Availability of Midterm Evaluation Draft Technical Assessment Report for Model Year 2022-2025 Light Duty Vehicle GHG Emissions and CAFE Standards*, 81 FR 49217 (July 27, 2016). In November 2016, EPA issued a proposed determination for the Mid-Term Evaluation. *Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards Under the Midterm Evaluation*, 81 FR 87927 (Dec. 6, 2016). On January 12, 2017, the EPA Administrator signed the Final Determination of the Mid-Term Evaluation of light-duty GHG emissions standards for MYs 2022–2025. Subsequently, EPA Administrator Scott Pruitt and Transportation Secretary Elaine L. Chao issued a joint notice announcing EPA’s conclusion that it would reconsider its Final Determination in order to allow additional consultation and coordination with NHTSA in support of a national harmonized program. *Notice of Intention to Reconsider the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light Duty Vehicles*, 82 FR 14671 (Mar. 22, 2017). As a result, EPA intends to make a new Final Determination regarding the appropriateness of the MY 2022–2025 GHG standards no later than April 1, 2018. NHTSA is statutorily required to issue a final rule for MY 2022 CAFE standards no later than April 1, 2020. *See* 49 U.S.C. § 32902(a).

*Analysis of Alternatives.* Pursuant to NEPA, NHTSA will prepare an EIS to evaluate the potential environmental impacts of its proposed action. Although NHTSA

evaluated the impacts of the augural standards in its EIS accompanying the MY 2017–2025 rulemaking (NHTSA, *Final Environmental Impact Statement, Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2017–2025*, Docket No. NHTSA-2011-0056 (July 2012)), NHTSA will prepare a new Draft EIS and Final EIS as part of this *de novo* rulemaking in order to provide for fresh consideration of all available information.

In an upcoming NPRM, NHTSA intends to propose separate attribute-based standards for passenger cars and light trucks for each of MYs 2022–2025. As in the previous CAFE rulemaking, NHTSA plans to propose vehicle footprint<sup>6</sup> as the attribute. The standards are expected to be defined as footprint “curves” for passenger cars and light trucks in each model year, where vehicles of different footprints have specific fuel economy “targets,” with larger vehicles (and light trucks) generally having lower fuel economy targets than smaller vehicles (and passenger cars), reflecting their fuel economy capabilities.<sup>7</sup> The shape and stringency of the curves would reflect, in part, NHTSA’s analysis of the technological and economic capabilities of the industry within the rulemaking timeframe. A manufacturer’s individual CAFE standards for cars and trucks, in turn, would be based on the target levels set for the footprints of its particular mix of cars and trucks manufactured in that model year. A manufacturer with a relatively high percentage of smaller vehicles would have a higher standard than a manufacturer with a relatively low percentage of smaller vehicles. Compliance would be determined by

---

<sup>6</sup> Footprint, which is a measure of vehicle size, is calculated by multiplying a vehicle’s wheelbase by its track width.

<sup>7</sup> Vehicle models of the same fleet but made by different manufacturers would have the same fuel economy target if they had the same vehicle footprint (i.e., the quantity of the attribute upon which the standards would be based).

comparing a manufacturer’s harmonically averaged fleet fuel economy level in a model year with a required fuel economy level calculated using the manufacturer’s actual production levels and the targets for each vehicle it produces.<sup>8</sup> As part of this rulemaking, NHTSA may evaluate the MY 2021 standards it finalized in 2012 to ensure they remain “maximum feasible.” As with any CAFE rulemaking, NHTSA will also consider other programmatic aspects other than stringency (e.g., flexibilities and vehicle classification) that may affect model years prior to and including those for which NHTSA would set fuel economy standards.

The purpose of and need for an agency’s action inform the reasonable range of alternatives to be considered in its NEPA analysis. 40 CFR § 1502.13. NHTSA sets CAFE standards as part of a comprehensive energy policy established by EPCA (and amended by EISA) with the purposes of conserving petroleum and of addressing energy independence and security by reducing U.S. reliance on foreign oil.

In developing alternatives for analysis in the EIS, NHTSA must consider EPCA’s requirements for setting CAFE standards. As discussed above, EPCA requires NHTSA to determine what level of CAFE stringency would be the “maximum feasible” for each model year, a determination made based on the consideration of four statutory factors: technological feasibility, economic practicability, the effect of other standards of the Government on fuel economy, and the need of the United States to conserve energy. 49 U.S.C. § 32902(f). In addition, EISA required fuel economy standards for MY 2011–2020 passenger cars and light trucks to “achieve a combined fuel economy average for

---

<sup>8</sup> While manufacturers may use a variety of flexibility mechanisms to comply with CAFE, including credits earned for over-compliance, NHTSA is statutorily prohibited from considering manufacturers’ ability to use statutorily-provided flexibility mechanisms in determining what level of CAFE standards would be maximum feasible. See 49 U.S.C. § 32902(h).

model year 2020 of at least 35 miles per gallon for the total fleet of passenger and non-passenger automobiles manufactured for sale in the United States for that model year.”

*Id.* § 32902(b)(2)(A). NHTSA was required to “prescribe annual fuel economy standard increases that increase the applicable average fuel economy standard ratably beginning with model year 2011 and ending with model year 2020.” *Id.* § 32902(b)(2)(C). For MY 2021-2030 passenger cars and light trucks, EISA does not set a target fuel economy or require that standards “increase...ratably” over the ten-year period. *See id.*

§ 32902(b)(2)(B).

NHTSA is considering the following alternatives for analysis in the Draft EIS:

- A “no action” alternative (also referred to as the “baseline”), which assumes, for purposes of NEPA analysis, that NHTSA would issue a rule that would continue the current CAFE standards for MY 2021 indefinitely. NEPA requires agencies to consider a “no action” alternative in their NEPA analyses and to compare the effects of not taking action with the effects of reasonable action alternatives in order to demonstrate the different environmental effects of the action alternatives. *See* 40 CFR § 1502.14(d). Given that NHTSA must set new CAFE standards and may not strictly take no action on fuel economy,<sup>9</sup> the agency has determined that, for this rulemaking, the closest analogue to a true “no action”

---

<sup>9</sup> *See* 49 U.S.C. § 32902(a). CEQ has explained that “[T]he regulations require the analysis of the no action alternative even if the agency is under a court order or legislative command to act. This analysis provides a benchmark, enabling decisionmakers to compare the magnitude of environmental effects of the action alternatives. . . . Inclusion of such an analysis in the EIS is necessary to inform the Congress, the public, and the President as intended by NEPA. [See 40 CFR § 1500.1(a).]” *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations*, 46 FR 18026 (1981) (emphasis added).



alternative would be to continue the already existing and enforceable standards indefinitely without further change.<sup>10</sup>

- “Action” alternatives represented by calculating a lower bound and upper bound of a range of reasonable annual fuel economy standards, from MY 2022 forward.<sup>11</sup> The calculations and the related evaluation of impacts would be performed separately for passenger cars and light trucks at each of these points so as to demonstrate their effects independently, since car and truck standards could change at different rates from one another and at different rates in different years. These alternatives would bracket the range of actions NHTSA may select. In sum, in its final rule, NHTSA would be able to select an action alternative from any stringency level within that range. NHTSA seeks public comments on the stringency levels at which to define the lower and upper bounds of this range of reasonable alternatives.
- The preferred alternative, reflecting annual fuel economy standards for both passenger cars and light trucks that fall at or between the upper and lower bounds identified above. NHTSA has not yet identified its preferred

---

<sup>10</sup> Although NHTSA included “augural” standards for MYs 2022–2025 in its previous CAFE rulemaking, those standards are not final. In the absence of additional rulemaking activity, those standards would not be enforceable. However, assuming that no standard would exist after MY 2021 for purposes of the “no action” alternative would not be a reasonable assumption (in light of NHTSA’s statutory responsibility to promulgate standards and the continuous forty-year history of the program), nor would it provide meaningful information to the decisionmaker for purposes of evaluating the impacts of the action alternatives. At this time, NHTSA believes that the continuation of the status quo ante, particularly that the final MY 2021 standards would continue indefinitely, is the most appropriate baseline against which to compare the proposed regulatory alternatives.

<sup>11</sup> CEQ guidance provides that agencies may use representative examples covering the “full spectrum” of reasonable alternatives for purposes of presenting the “range of alternatives” in an EIS. *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations*, 46 FR 18026 (Mar. 23, 1981).

alternative. NHTSA seeks comments on how it should define and balance the statutory criteria to choose the preferred alternative, given the statutory requirement of setting “maximum feasible” fuel economy standards. 49 U.S.C. § 32902(f). When suggesting an approach, please explain the recommended way to balance EPCA’s factors (technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy).<sup>12</sup>

Thus, NHTSA plans to analyze the impacts of eight different standards in the Draft EIS: two points bracketing the possible action alternatives for passenger cars, two points bracketing the possible alternatives for light trucks, a No Action Alternative and a preferred alternative for passenger cars, and a No Action Alternative and a preferred alternative for light trucks. We note that the NPRM and Regulatory Impact Analysis (RIA) may analyze additional alternatives within the brackets described in the Draft EIS in order to explore different approaches to balancing the statutory factors.

NHTSA will analyze the lower bound and upper bound of a range of average annual fuel economy standards that would satisfy EPCA’s requirement that the standards be “maximum feasible” for each model year, based on the different ways NHTSA could weigh EPCA’s four statutory factors. Generally speaking, more stringent average annual fuel economy standards might weigh energy conservation and environmental considerations more heavily and technological feasibility and economic practicability concerns less heavily. In contrast, less stringent average annual fuel economy standards

---

<sup>12</sup> Note that NHTSA is statutorily prohibited from considering statutorily-provided flexibility mechanisms in determining what standards would be maximum feasible. 49 U.S.C. § 32902(h).

might weigh technological feasibility and economic practicability concerns more heavily and energy conservation and environmental considerations less heavily.

The range of alternatives will reflect differences in the degree of technology adoption across the fleet, in costs to manufacturers and consumers, and in conservation of oil and related impacts to the environment. For example, the most stringent average annual fuel economy standard NHTSA will evaluate would require greater adoption of fuel-saving technology across the fleet, including more advanced technology, than the least stringent average annual fuel economy standard NHTSA will evaluate. As a result, the most stringent alternative would impose greater costs and achieve greater energy conservation.

The changes in stringency considered in the lower and upper bounds may be defined as “average” changes in stringency; the preferred alternative and actual standards may either be constant throughout the period or may vary from year to year. However, analysis of the average yearly change over that period would provide sufficient environmental analysis to bracket the range of environmental impacts of reasonable alternatives and allow for a reasoned choice among the alternatives presented.

NHTSA may select the lower or upper bound levels of stringency for passenger cars and for light trucks as its preferred alternative, or it may select levels of stringency that fall between those bounds. Within the range identified above, NHTSA may consider setting more stringent standards for the earlier years of the rule than for the later years, or, alternatively, setting less stringent standards for the earlier years of the rule than for the later years, depending on our assessment of what would be “maximum feasible” for those time periods for each fleet. In addition, NHTSA may consider setting standards for

passenger cars and light trucks that change at different rates between the low and high levels it is considering, depending on a determination of the maximum feasible level for each fleet over time. NHTSA also may select “maximum feasible” fuel economy standards for some or all model years that decrease or remain the same as compared to the immediately prior model year(s).

In selecting a preferred alternative, NHTSA is also mindful of its responsibility under Executive Order 13783, signed by President Donald J. Trump on March 28, 2017, to ensure that “necessary and appropriate environmental regulations comply with the law, are of greater benefit than cost, when permissible, achieve environmental improvements for the American people, and are developed through transparent processes that employ the best available peer-reviewed science and economics.”<sup>13</sup> E.O. 13783, *Promoting Energy independence and Economic Growth* (Mar. 28, 2017).

*Planned Analysis.* While the main focus of NHTSA’s prior CAFE EISs for light duty vehicles (*i.e.*, the EIS for MYs 2012-2016 and MYs 2017-2025) was the quantification of impacts to energy, air quality, and climate, and qualitative analysis of life-cycle impacts and cumulative impacts, it also addressed other potentially affected resources. NHTSA conducted a qualitative review of impacts on resources such as water resources, biological resources, land use, hazardous materials, safety, noise, historic and cultural resources, and environmental justice.

---

<sup>13</sup> The CAFE program is not strictly an environmental one, as it was created under EPCA as part of a national energy policy to reduce U.S. reliance on foreign oil. However, fuel economy standards do have environmental impacts, and as noted above, NHTSA construes the statutory factors in EPCA as including environmental considerations. The environmental impacts will be analyzed in the EIS, and NHTSA is mindful of its obligations under E.O. 13783.

Similar to past EIS practice, NHTSA plans to analyze environmental impacts related to fuel and energy use, emissions and their effects on climate change and the environment,<sup>14</sup> air quality,<sup>15</sup> natural resources, and the human environment. NHTSA will address life-cycle impacts consistent with its past EISs, by focusing on reviewing and summarizing findings from existing, credible scientific information evaluating the most significant environmental impacts from some of the fuels, materials, and technologies that may be used to comply with the Proposed Action and alternatives. NHTSA also will consider the cumulative impacts of the proposed standards for MY 2022–2025 passenger cars and light trucks together with any past, present, and reasonably foreseeable future actions.

NHTSA anticipates uncertainty in estimating the potential environmental impacts related to climate change. To account for this uncertainty, NHTSA plans to evaluate a range of potential global temperature changes that may result from changes in fuel and energy consumption and GHG emissions attributable to new CAFE standards. It is difficult to quantify how the specific impacts due to the potential temperature changes attributable to new CAFE standards may affect many aspects of the environment. NHTSA will endeavor to gather the key relevant and credible information using a transparent process that employs the best available peer-reviewed science and economics. NHTSA invites public comments on the scope of its analysis on climate change impacts,

---

<sup>14</sup> NHTSA is planning to include in this EIS a quantitative analysis to estimate the impact of the alternatives on ocean acidification based on changes in atmospheric CO<sub>2</sub> concentrations.

<sup>15</sup> Consistent with past practice, in addition to the air quality analysis presented in the Draft and Final EIS, NHTSA will conduct a national-scale photochemical air quality modeling and health risks assessment that will be included in the Final EIS, but not the Draft EIS, due to the substantial time required to complete the analysis. In addition, because of the lead time required for this analysis, it will be based on the alternatives presented in the Draft EIS, but not the alternatives as they may be revised for the Final EIS. Still, NHTSA believes the analysis will provide meaningful information for the decisionmaker and the public.

including citations to peer-reviewed scientific articles to frame and analyze the relevant issues.

In order to streamline its documentation and eliminate redundancy, NHTSA plans not to include analyses of either monetized health benefits in its air quality analysis or monetized climate change benefits in its climate change analysis in the EIS, as both of those analyses will be included in its RIA (consistent with past practice), which is subject to public notice and comment concurrently with the EIS. NHTSA will incorporate the analyses in the RIA by reference in the EIS consistent with the requirements of the CEQ implementing regulations. 40 CFR § 1502.21. The EIS will continue to present analyses on air quality emissions (including non-monetized health impacts), GHG emissions, and climate change impacts (including impacts on CO<sub>2</sub> concentrations, temperature, sea-level rise, and precipitation).

NHTSA expects to rely on previously published EISs, incorporating material by reference “when the effect will be to cut down on bulk without impeding agency and public review of the action.” *Id.* Therefore, the NHTSA NEPA analysis and documentation will incorporate by reference relevant materials, including portions of the agency’s prior NEPA documents, where appropriate.

*Scoping and Public Participation.* NHTSA’s NEPA analysis for the MY 2022–2025 CAFE standards will consider the direct, indirect, and cumulative environmental impacts of proposed standards and those of reasonable alternatives. The scoping process initiated by this notice seeks public comment on the range of alternatives under consideration, on the impacts to be considered, and on the most important matters for in-

depth analysis in the EIS. *See* 40 CFR §§ 1500.5(d), 1501.7, 1508.25. All comments relevant to the scoping process are welcome.

NHTSA invites the public to participate in the scoping process<sup>16</sup> by submitting written comments concerning the appropriate scope of the NEPA analysis for the proposed CAFE standards to the docket number identified in the heading of this notice, using any of the methods described in the **ADDRESSES** section of this notice. NHTSA does not plan to hold a public scoping meeting because, based on prior experience, written comments will be effective in identifying and narrowing the considerations for analysis.

NHTSA is interested in comments on its bracketing approach to presenting a reasonable range of alternatives. Subject to the statutory requirements of EPCA/EISA, a variety of potential alternatives could be considered that meet the purpose and need for the agency's action, each falling along a theoretically infinite continuum of potential standards. As described above, NHTSA plans to address this by identifying alternatives at the upper and lower bounds of a range within which we believe the statutory requirement for "maximum feasible" would be satisfied, as well as identifying and analyzing the impacts of a preferred alternative. In this way, NHTSA expects to bracket the potential environmental impacts of the standards it may select.<sup>17</sup>

---

<sup>16</sup> Consistent with NEPA and implementing regulations, NHTSA is sending this notice directly to: (1) Federal agencies having jurisdiction by law or special expertise with respect to the environmental impacts involved or authorized to develop and enforce environmental standards; (2) the Governors of every State, to share with the appropriate agencies and offices within their administrations and with the local jurisdictions within their States; (3) organizations representing state and local governments and Indian tribes; and (4) other stakeholders that NHTSA reasonably expects to be interested in the NEPA analysis for the MY 2022–2025 CAFE standards. *See* 42 U.S.C. § 4332(2)(C); 49 CFR § 520.21(g); 40 CFR §§ 1501.7, 1506.6.

<sup>17</sup> Should NHTSA ultimately choose to set standards at levels other than the preferred alternative identified in the NPRM and Draft EIS, we believe that this bracketing will properly inform the decisionmaker, so long as the standards are set within its parameters.

Two important purposes of scoping are identifying the significant considerations that merit in-depth analysis in the EIS and identifying and eliminating from detailed analysis the matters that are not significant and therefore require only a brief discussion in the EIS. 40 CFR §§ 1500.4(g), 1501.7(a). In light of these purposes, written comments should include an internet citation (with a date last visited) to each study or report cited in the comments, if one is available. If a document cited is not available to the public online, the commenter should either provide sufficient bibliographical information to allow NHTSA to locate and obtain a copy of the study or attach a copy to the comments.<sup>18</sup> Commenters should indicate how each document cited or attached to their comments is relevant to the NEPA analysis and indicate the specific pages and passages in the attachment that are most informative.

The more specific the comments are, and the more support they provide in identifying peer-reviewed scientific studies and reports, the more useful the comments will be to the NEPA process. For example, if a comment identifies an additional area of impact or environmental concern that NHTSA should analyze, or an analytical tool or model that NHTSA should use to evaluate these environmental impacts, the comment should clearly describe it and provide a reference to a specific peer-reviewed scientific study, report, tool, or model, if possible. Specific, well-supported comments will help the agency prepare an EIS that is focused and relevant and will serve NEPA's overarching aims of making high quality information available to decisionmakers and the public by "concentrat[ing] on the issues that are truly significant to the action in question, rather than amassing needless detail." 40 CFR § 1500.1(b). By contrast, mere assertions that

---

<sup>18</sup> Please be mindful of copyright restrictions when attaching documents to any comments, as they will be made publicly available in the agency's docket.



the agency should evaluate broad lists or categories of concerns, without support, will not assist the scoping process for the proposed standards.

Please be sure to reference the docket number identified in the heading of this notice in any submitted comments. All comments and materials received, including the names and addresses of the commenters who submit them, will become part of the administrative record and will be posted on the web at <http://www.regulations.gov>.

Separate *Federal Register* notices published by EPA will announce the availability of the Draft EIS, which will be available for public comment, and the Final EIS. NHTSA will issue the Draft EIS concurrently with its NPRM. In addition, NHTSA will simultaneously issue a Final EIS and Record of Decision (Final Rule), pursuant to 49 U.S.C. 304a, unless it is determined that statutory criteria or practicability considerations preclude concurrent issuance. NHTSA also plans to continue to post information about the NEPA process and this CAFE rulemaking on its website (<http://www.nhtsa.gov>).

Issued in Washington, D.C. on \_\_\_\_\_

under authority delegated in 49 CFR parts 1.81 and 1.95.

\_\_\_\_\_  
James Tamm  
Chief, Fuel Economy Division

(signature page for Notice of Intent to Prepare an Environmental Impact Statement for  
Model Year 2022–2025 Corporate Average Fuel Economy Standards)

Message

---

**From:** Rees, Sarah [rees.sarah@epa.gov]  
**Sent:** 8/30/2017 8:16:09 PM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Nickerson, William [Nickerson.William@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]  
**Subject:** Protection of Stratospheric Ozone: Refrigerant Management Regulations for Small Cans of Motor Vehicle Air Conditioning Refrigerant  
**Attachments:** Cans summary.pdf; 608 clean up rule 5-19-17-cn.docx

Hi Samantha and Brittany – attached is a summary of the cans rule, as well as the rule text. Note that this action is a direct final/NPRM combination; the text I've attached is from the direct final, but the NPRM text is identical. Let us know if you have any questions.

Cheers,  
Sarah

**Sarah L. Rees, Ph.D.**

Director, Office of Regulatory Policy & Management

US EPA – Office of Policy

(202) 564-1986 (o) | Personal Phone / Ex. 6 m)

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 82**

**[EPA-HQ-OAR-2017-0213; FRL-XXXX]**

**RIN 2060-AT43**

**Protection of Stratospheric Ozone: Refrigerant Management Regulations for Small Cans of Motor Vehicle Refrigerant**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Direct Final Rule.

**SUMMARY:** EPA is taking direct final action to correct an editing oversight that lead to a potential conflict in a prior rulemaking as to whether or not containers holding two pounds or less of non-exempt substitute refrigerants for use in motor vehicle air conditioning that are not equipped with a self-sealing valve can be sold to persons that are not certified technicians, provided those small cans were manufactured or imported prior to January 1, 2018. This action clarifies that those small cans may continue to be sold to persons that are not certified as technicians under sections 608 or 609 of the Clean Air Act.

**DATES:** This rule is effective on **[Insert date 90 days from date of publication in the Federal Register]** without further notice, unless EPA receives adverse comment by **[Insert date 30 days from date of publication in the Federal Register]**. If EPA receives adverse comment, we will publish a timely withdrawal in the Federal Register informing the public that the rule will not take effect.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2017-0213, at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once

submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** Sara Kemme by regular mail: U.S. Environmental Protection Agency, Stratospheric Protection Division (6205T), 1200 Pennsylvania Avenue, NW, Washington, DC, 20460; by telephone: (202) 566-0511; or by email: [kemme.sara@epa.gov](mailto:kemme.sara@epa.gov).

## **SUPPLEMENTARY INFORMATION**

### **I. Why Is EPA Using a Direct Final Rule?**

EPA is publishing this direct final rule without a prior proposed rule because we view this as a noncontroversial action and anticipate no adverse comment. This rule makes a minor change in regulatory text, which is intended to resolve a potential conflict in the current regulatory text and to ensure that the regulatory text conforms to the EPA's intention when finalizing the regulatory text at issue. However, in the "Proposed Rules" section of today's Federal Register, we are publishing a separate document that will serve as the proposed rule to make this revision to the regulatory text if adverse comments are received on this direct final

rule. We will not institute a second comment period on this action. Any parties interested in commenting must do so at this time. In this action, EPA is not making, and is not seeking comment on, any changes to the regulations at 40 CFR part 82, subpart F other than the revision discussed in this notice. For further information about commenting on this rule, see the ADDRESSES section of this document.

If EPA receives adverse comment, we will publish a timely withdrawal in the Federal Register informing the public that this direct final rule will not take effect. In that case, we would address all public comments in any subsequent final rule based on the proposed rule. If no adverse comment is received by **[Insert date 30 days from date of publication in the Federal Register]**, this direct final rule will be effective on **[Insert date 90 days from date of publication in the Federal Register]** without further notice and no further action will be taken on the proposed rule.

## **II. Does this Action Apply to Me?**

Categories and entities potentially affected by this action include entities that distribute or sell small cans of refrigerant for use in motor vehicle air conditioning (MVAC). Regulated entities include, but are not limited to, manufacturers and distributors of small cans of refrigerant (NAICS codes 325120, 441310, 447110) such as automotive parts and accessories stores and industrial gas manufacturers. This list is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility, company, business, or organization could be regulated by this action, you should carefully examine the regulations at 40 CFR part 82, subpart F. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

### **III. What Should I Consider as I Prepare My Comments for EPA?**

A. *Submitting CBI.* Do not submit this information to EPA through [www.regulations.gov](http://www.regulations.gov) or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI). In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

B. *Tips for Preparing Your Comments.* When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, Federal Register date and page number).
- Follow directions - The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.

- Make sure to submit your comments by the comment period deadline identified.

#### **IV. What Action is the Agency Taking?**

Section 608 of the Clean Air Act (CAA) bears the title “National Recycling and Emission Reduction Program.” Under the structure of section 608, this program has three main components. First, section 608(a) requires EPA to establish standards and requirements regarding use and disposal of class I and II substances, including a comprehensive refrigerant management program to limit emissions of ozone-depleting refrigerants. The CAA directs EPA to include regulations that reduce the use and emissions of class I and II substances to the lowest achievable level and that maximize the recapture and recycling of such substances. The second component, section 608(b), requires that the regulations issued pursuant to subsection (a) contain requirements for the safe disposal of class I and class II substances. The third component, section 608(c), prohibits the knowing venting, release, or disposal of ozone-depleting refrigerants and their substitutes during the maintenance, service, repair, or disposal of air-conditioning and refrigeration appliances or industrial process refrigeration.

EPA first issued regulations under section 608 of the CAA on May 14, 1993 (58 FR 28660), to establish the national refrigerant management program for ozone-depleting refrigerants recovered during the maintenance, service, repair, and disposal of air-conditioning and refrigeration appliances. These regulations were intended to substantially reduce the use and emissions of ozone-depleting refrigerants. EPA revised these regulations through subsequent rulemakings published on August 19, 1994 (59 FR 42950), November 9, 1994 (59 FR 55912), August 8, 1995 (60 FR 40420), July 24, 2003 (68 FR 43786), March 12, 2004 (69 FR 11946), January 11, 2005 (70 FR 1972), May 23, 2014 (79 FR 29682), and April 10, 2015 (80 FR 19453). For a more detailed summary of the history of EPA’s Refrigerant Management Program



see the discussion in the most recent update to these regulations at 81 FR 82272, 82275 (Nov. 18, 2016).

On November 9, 2015, EPA proposed the most recent updates to the refrigerant management regulations under section 608 of the CAA (80 FR 69458). Among other things, EPA proposed to extend the sales restriction to non-exempt substitute refrigerants with an exception for small cans of refrigerant for use in MVAC. That is, the proposed revisions would have restricted the sale of non-exempt substitute refrigerants to certified technicians, with an exception for small cans (two pounds or less) of non-exempt substitute refrigerant for the servicing of MVACs<sup>1</sup> if the cans had a self-sealing valve. EPA requested comments on several aspects of this proposal including a scenario that would have included a sell-through provision for all small cans manufactured or imported prior to that effective date. 80 FR 69481. The proposal further stated that:

For manufacture and import of small cans of refrigerant for MVAC servicing, EPA is proposing a compliance date of one year from publication of the final rule. EPA is also proposing to allow small cans manufactured and placed into initial inventory or imported before that date to be sold for one additional year. For example, if the rule is published on July 1, 2016, small can manufacturers would have until July 1, 2017, to transition their manufacturing lines to add self-sealing valves. Manufacturers, distributors, and auto parts stores would be able to sell all small cans manufactured and placed into initial inventory or imported prior to July 1, 2017, until July 1, 2018. EPA seeks comments on this proposed implementation timeline. [80 FR 69509]

On November 18, 2016, EPA published a rule finalizing the proposed restriction that non-exempt substitute refrigerants may only be sold to technicians certified under sections 608 or 609 of the CAA. (81 FR 82280). In the case of refrigerant for use in MVAC, EPA finalized the exemption for the sale of certain small cans of non-ozone-depleting substitutes with a self-sealing valve to allow the do-it-yourself community to continue servicing their personal vehicles.

---

<sup>1</sup> In this context, containers that meet these criteria are referred to interchangeably as “small cans of MVAC refrigerant,” “small cans of refrigerant for MVAC servicing,” or simply “small cans.”

*Id.* However, the agency did not finalize the sell-through provision. The preamble to the final rule states that, “EPA is requiring that small cans of non-exempt substitute refrigerant be outfitted with self-sealing valves by January 1, 2018. Based on comments, EPA is not finalizing the proposal to prohibit the sale of small cans that do not contain self-sealing valves that were manufactured or imported prior to that requirement taking effect.” *Id.* The preamble further stated:

With regards to small cans of MVAC refrigerant, manufacturers, distributors and retailers of automotive refrigerant supported the proposed “manufacture-by” date of one year from publication of the final rule, but commented that they oppose a sell-through date for small cans that do not have self-sealing valves. They commented that such a requirement would be inefficient, burdensome, costly, and environmentally problematic. It would require all retailers to know of the requirement and establish processes for returning unsold cans back to the manufacturer for destruction. More likely, the cans may be improperly disposed of, which would negate the environmental benefit of the new provisions. One commenter stated that a “manufacture-by” date would shift EPA’s burden in ensuring compliance from a few manufacturers to thousands of retailers. Furthermore, commenters cited EPA’s July 2015 SNAP rule (80 FR 42901; July 20, 2015) which listed HFC-134a as unacceptable for use as an aerosol as of a “manufacture-by” date, rather than a “sell-by” date. [81 FR 82342]

EPA described its intention to allow the continued sale of small cans without self-sealing valves that were manufactured or imported before the January 1, 2018, compliance date as follows:

In response to the comments received on EPA’s proposal to allow small cans manufactured and placed into initial inventory or imported before that date to be sold for one additional year, EPA is not finalizing the sell-through requirement and is finalizing only a date by which small cans must be manufactured or imported with a self-sealing valve. EPA agrees that this is the least-burdensome option and that it avoids the potential for any unintended consequences of a “sell-by” date. [81 FR 82342]

These intentions were also expressed in the regulatory text at 40 CFR 82.154(c)(2), which was revised in the November 2016 rule to state: “*Self-sealing valve specifications.* This provision applies starting January 1, 2018, for all containers holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC that are manufactured or imported on or after

that date. (i) Each container holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC must be equipped with a single self-sealing valve that automatically closes and seals when not dispensing refrigerant. . . .” However, because of an editing error, another provision, 40 CFR 82.154(c)(1)(ix), contains text that could be construed as contradicting the Agency’s clearly expressed intent to allow non-technicians to purchase, and retailers to sell, small cans of refrigerant for use in MVAC that were manufactured or imported before the January 1, 2018, compliance date irrespective of whether they have a self-sealing valve. The relevant text in 40 CFR 82.154(c)(1) states that:

No person may sell or distribute, or offer for sale or distribution, any substance that consists in whole or in part of a class I or class II substance or, starting on January 1, 2018, any non-exempt substitute for use as a refrigerant unless . . . (ix) The non-exempt substitute refrigerant is intended for use in an MVAC and is sold in a container designed to hold two pounds or less of refrigerant, has a unique fitting, and has a self-sealing valve.

The Automotive Refrigeration Products Institute and the Auto Care Association inquired about whether the language in 40 CFR 82.154(c)(1)(ix) effectively negates the provision in 40 CFR 82.154(c)(2) and the preamble discussion showing EPA’s intention to allow small cans of refrigerant for use in MVAC manufactured or imported before January 1, 2018, to continue to be sold without self-sealing valves. EPA is publishing this direct final rule to revise the regulatory text, so that persons in possession of small cans of refrigerant for use in MVAC without self-sealing valves that were manufactured or imported before January 1, 2018, can be assured that they will be able to sell off their existing inventories without disruption.

This action will eliminate burden associated with regulatory uncertainty in this area. The Automotive Refrigeration Products Institute and the Auto Care Association informed EPA that the lack of clarity surrounding the status of small cans of refrigerant for use in MVAC without self-sealing valves that were manufactured or imported before the compliance date is already

creating confusion. Unless resolved, this lack of clarity could unnecessarily influence sales of automotive refrigerant during 2017. This is because retailers may not want to stock large numbers of these small cans of refrigerant for use in MVAC unless they are given some assurance that they will be able to sell off any remaining inventory after January 1, 2018. There is also the concern that if clarity is not provided by January 1, 2018, retailers may feel compelled to manually pull cans without self-sealing valves from their shelves and return the cans to their supplier(s). This rule will eliminate the cost of that stranded inventory and also eliminate other non-quantified burdens associated with the removal of such cans from the market, such as the labor involved in segregating small cans with self-sealing valves from those without self-sealing valves and physically pulling those from shelves.

## **V. Statutes and Executive Orders Review**

### A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563:

#### Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

### B. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control number 2060–0256. These changes do not add information collection requirements beyond those currently required under the applicable regulations.

### C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action clarifies that small cans of refrigerant for use in MVAC may be sold to persons who are not certified technicians even if they are not equipped with a self-sealing valve, so long as those small cans are manufactured or imported prior to January 1, 2018. We have therefore concluded that this action will have no net regulatory burden for all directly regulated small entities.

#### D. Unfunded Mandates Reform Act

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action corrects a potential conflict in the refrigerant management regulations as to whether or not small cans of refrigerant for use in MVAC could be sold to non-technicians if they were manufactured or imported prior to January 1, 2018, and do not have a self-sealing valve. This action clarifies that those small cans of refrigerant for use in MVAC may be sold to persons who are not certified technicians.

#### E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

#### F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. This action corrects a potential conflict in the refrigerant management regulations as to whether or not small cans of refrigerant for use in MVAC could be sold to non-technicians if they were manufactured or imported prior to January 1, 2018, and do not have a self-sealing valve. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

This action does not affect the level of protection provided to human health or the environment. This action corrects a potential conflict in the refrigerant management regulations as to whether or not small cans of refrigerant for use in MVAC could be sold to non-technicians if they were manufactured or imported prior to January 1, 2018, and do not have a self-sealing valve. This action clarifies that those small cans of refrigerant for use in MVAC may be sold to persons who are not certified technicians. The documentation for this decision is contained in Docket No. EPA- EPA-HQ-OAR-2017-0213, where EPA’s assessment of the underlying regulatory changes that led to this correction found no disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

**Protection of Stratospheric Ozone: Refrigerant Management Regulations for  
Small Cans of Motor Vehicle Refrigerant (Page 13 of 14)**

**List of Subjects in 40 CFR Part 82**

Environmental protection, Air pollution control, Chemicals, Reporting and recordkeeping requirements.

Dated:

E. Scott Pruitt,  
Administrator.



For the reasons set forth in the preamble, the Environmental Protection Agency amends 40 CFR part 82 as follows:

## **PART 82- PROTECTION OF STRATOSPHERIC OZONE**

1. The authority citation for part 82 continues to read as follows:

**Authority:** 42 U.S.C. 7414, 7601, 7671-7671q.

2. Amend §82.154 to revise paragraph (c)(1)(ix). The revision reads as follows:

\*\*\*\*\*

(c) \*\*\*

(1) \*\*\*


(ix) The non-exempt substitute refrigerant is intended for use in an MVAC and is sold in a container designed to hold two pounds or less of refrigerant, has a unique fitting, and, if manufactured or imported on or after January 1, 2018, has a self-sealing valve that complies with the requirements of paragraph (c)(2) of this section.

\*\*\*\*\*

Message







**From:** Owens, Nicole [Owens.Nicole@epa.gov]  
**Sent:** 6/2/2017 8:42:13 PM  
**To:** Dunham, Sarah [Dunham.Sarah@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]  
**CC:** Schmidt, Lorie [Schmidt.Lorie@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; Rees, Sarah [rees.sarah@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Zenick, Elliott [Zenick.Elliott@epa.gov]; McGartland, Al [McGartland.Al@epa.gov]; Page, Steve [Page.Steve@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Sasser, Erika [Sasser.Erika@epa.gov]; Harvey, Reid [Harvey.Reid@epa.gov]; Culligan, Kevin [Culligan.Kevin@epa.gov]  
**Subject:** RE: For review: latest drafts of the CPP documents

This has been uploaded into ROCIS.

 Login: cmueller

---

**HOME**   **AGENDA/REGS**   **ADMINISTRATION**


HOME   RULES   AGENDA   SEARCH   AGENCY EO REVIEW   REPORTS

Home   Agenda/Regs   Agency EO Review   EO Package

---

Rule:	2060-AT55 (201704)	Agency/Sub Agency:	2060 EPA/DAR	Tracking #:	
Stage of Rulemaking:	Proposed Rule Stage	Submitted by:	Caryn Mueller	Submitted Date:	06/02/2017
Title:	Review of the Clean Power Plan				

---

 EO Review Package was successfully submitted at 06/02/2017 16:36:04 PM.

EO Review Package 2060-AT55

**From:** Dunham, Sarah  
**Sent:** Friday, June 02, 2017 2:51 PM  
**To:** Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>  
**Cc:** Schmidt, Lorie <Schmidt.Lorie@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; McGartland, Al <McGartland.Al@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Harvey, Reid <Harvey.Reid@epa.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>; Owens, Nicole <Owens.Nicole@epa.gov>  
**Subject:** RE: For review: latest drafts of the CPP documents

Okay—we now have what we need and folks are putting the pieces together -- we will send to OP the final package as quickly as we possibly can.

**From:** Gunasekara, Mandy  
**Sent:** Friday, June 02, 2017 2:46 PM  
**To:** Dravis, Samantha <dravis.samantha@epa.gov>  
**Cc:** Schmidt, Lorie <Schmidt.Lorie@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; McGartland, Al <McGartland.Al@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Harvey, Reid <Harvey.Reid@epa.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>; Owens, Nicole <Owens.Nicole@epa.gov>  
**Subject:** Re: For review: latest drafts of the CPP documents

Yes- send send send.

Sent from my iPhone

On Jun 2, 2017, at 2:29 PM, Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)> wrote:

All:

Attached are the final edits from the political team. Please use this version, and send the final package up to OP as soon as possible.

Thanks for all your work.

Best,  
Samantha

---

**From:** Schmidt, Lorie

**Sent:** Friday, June 02, 2017 12:27 PM

**To:** Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>

**Cc:** Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>; Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>; Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>

**Subject:** RE: For review: latest drafts of the CPP documents

I am not sure who has the pen on the document right now and who is accepting or rejecting OGC's line edits. For that matter, I'm not sure whether all are being accepted or not.

## Deliberative Process / Ex. 5

Lorie Schmidt  
Associate General Counsel, Air and Radiation  
Office of General Counsel  
US Environmental Protection Agency  
(202)564-1681

---

**From:** Schwab, Justin

**Sent:** Friday, June 02, 2017 11:57 AM

**To:** Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>

**Cc:** Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>; Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter

<Tsirigotis.Peter@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Harvey, Reid  
<Harvey.Reid@epa.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>

**Subject:** Re: For review: latest drafts of the CPP documents

## Deliberative Process / Ex. 5

Sent from my iPhone

On Jun 2, 2017, at 11:55 AM, Schmidt, Lorie <Schmidt.Lorie@epa.gov> wrote:

OGC has made changes using some combination of historical “practice and understanding” instead of historical interpretation.

## Deliberative Process / Ex. 5

Here’s the link to the document:

[https://usepa.sharepoint.com/sites/OGC\\_Work/CPP\\_Review/Shared%20Documents/CP%20Repeal%20Proposal.FR%20Notice.5.31.17.docx?d=w7ad53efb7f4043078bc6e90cdf0e591](https://usepa.sharepoint.com/sites/OGC_Work/CPP_Review/Shared%20Documents/CP%20Repeal%20Proposal.FR%20Notice.5.31.17.docx?d=w7ad53efb7f4043078bc6e90cdf0e591)

let us know if you need more.

Lorie

Lorie Schmidt  
Associate General Counsel, Air and Radiation  
Office of General Counsel  
US Environmental Protection Agency  
(202)564-1681

---

**From:** Schmidt, Lorie  
**Sent:** Friday, June 02, 2017 11:09 AM  
**To:** Rees, Sarah <rees.sarah@epa.gov>  
**Cc:** Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; McGartland, Al <McGartland.Al@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Harvey, Reid <Harvey.Reid@epa.gov>  
**Subject:** Re: For review: latest drafts of the CPP documents

Working on it now.

Sent from my iPhone

On Jun 2, 2017, at 10:53 AM, Rees, Sarah <rees.sarah@epa.gov> wrote:

We are ready to send on our end whenever you get the package to us.

---

**From:** Gunasekara, Mandy  
**Sent:** Friday, June 02, 2017 10:31 AM  
**To:** Schmidt, Lorie <Schmidt.Lorie@epa.gov>  
**Cc:** Dunham, Sarah <Dunham.Sarah@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; McGartland, Al <McGartland.Al@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Harvey, Reid <Harvey.Reid@epa.gov>  
**Subject:** Re: For review: latest drafts of the CPP documents

I talked to Justin about these issues and will defer to his final call on the edits. Once that is done, let's send this to OMB.

Sent from my iPhone

On Jun 2, 2017, at 9:53 AM, Schmidt, Lorie <Schmidt.Lorie@epa.gov> wrote:

Schmidt, Lorie has shared a OneDrive for Business file with you. To view it, click the link below.

<image00001.png> CPP Repeal Proposal.FR Notice.5.31.17.docx

---

Please find attached our reactions to Mandy's comments. A few things to note:

## Deliberative Process / Ex. 5

Let us know if you would like to discuss.

Thanks,

Lorie

Lorie Schmidt  
Associate General Counsel, Air and Radiation  
Office of General Counsel  
US Environmental Protection Agency  
(202)564-1681

---

**From:** Gunasekara, Mandy  
**Sent:** Wednesday, May 31, 2017 1:04 PM  
**To:** Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>  
**Subject:** RE: For review: latest drafts of the CPP documents

The attached includes my edits (tracked changes starting page 5). Please incorporate these into the final version.

---

**From:** Dunham, Sarah  
**Sent:** Wednesday, May 31, 2017 12:01 PM  
**To:** Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>  
**Subject:** RE: For review: latest drafts of the CPP documents

Thank you Mandy—What you laid out below is consistent with how we are proceeding.

For a little more context on the work that is ongoing, OAR and OP have been working together on both documents:

- OAR will have completed edits to the RIA to send back to OP by COB today.
- OAR has further edits we are making to the Executive Order sections of the preamble per comments from OP, we expect those sections of the preamble will need some further back and forth tomorrow with OP and OGC but that should be wrapped up in time to go to OMB on Friday.

---

**From:** Gunasekara, Mandy  
**Sent:** Wednesday, May 31, 2017 10:18 AM  
**To:** Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>  
**Subject:** RE: For review: latest drafts of the CPP documents

I'd like to make sure we are all on the same page regarding CPP. This is my understanding of the status. Please let me know if any of this needs modification:

- Sam, Brittany and I will have any comments on preamble by COB today;
- OP/OAR will have an updated/final RIA by COB today;
- Thursday, final touches/final review by OGC (per Justin's request)
- Friday – send to OMB.

Best,  
Mandy

---

**From:** Lewis, Josh  
**Sent:** Friday, May 26, 2017 3:00 PM  
**To:** Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>  
**Subject:** For review: latest drafts of the CPP documents

Attached are the latest drafts of the CPP Rescission Notice Preamble and the RIA. Sarah and others in OAR are still reviewing one/both of these, but we wanted you to have the latest drafts before the long weekend.

A few notes on the preamble:

## Deliberative Process / Ex. 5

## **Deliberative Process / Ex. 5**

A few important notes on the RIA:

## **Deliberative Process / Ex. 5**

We anticipate having the next draft of the RIA ready by COB Wednesday, pending comments received from this review.

Josh

<CPP Repeal Proposal.FR Notice.6.2.2017-Dravis Edits.docx>



Message

---

**From:** McGartland, Al [McGartland.Al@epa.gov]  
**Sent:** 5/10/2017 7:22:23 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** ej/children CPP repeal attached write up  
**Attachments:** EJ impacts of CPP repeal.docx

Message

---

**From:** Dunham, Sarah [Dunham.Sarah@epa.gov]  
**Sent:** 4/28/2017 9:27:44 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Schmidt, Lorie [Schmidt.Lorie@epa.gov]; Zenick, Elliott [Zenick.Elliott@epa.gov]; McGartland, Al [McGartland.Al@epa.gov]; Rees, Sarah [rees.sarah@epa.gov]  
**CC:** Page, Steve [Page.Steve@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Harvey, Reid [Harvey.Reid@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]  
**Subject:** CPP NPR and cost memo  
**Attachments:** cost\_memo\_draft\_042817.docx; CPP Proposal.FR Notice.4.21.17.draft.docx

Attached are the current version of the CPP rescission NPR and accompanying cost savings memo. With regards to the NPR, we worked off a version Lorie sent to us yesterday afternoon (via e-mail at 4:27 PM on Thursday April 27). There are several things worth highlighting:

1. Our edits address several things:

**Deliberative Process / Ex. 5**

- 2.

**Deliberative Process / Ex. 5**

- 3.

**Deliberative Process / Ex. 5**

The attached cost savings memo has been reviewed by OAR and OP staff.

Comments, further direction on timing, and specific direction on any of the items mentioned above (or not mentioned above) are very welcome.

Message

---

**From:** Dravis, Samantha [dravis.samantha@epa.gov]  
**Sent:** 4/28/2017 2:03:41 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** FW: CPP Proposal.FR Notice.4.20.2017  
**Attachments:** CPP Proposal.FR Notice.4.20.2017- with first draft of EO.DOCX

---

**From:** McGartland, Al  
**Sent:** Friday, April 28, 2017 9:22 AM  
**To:** Dravis, Samantha <dravis.samantha@epa.gov>  
**Subject:** FW: CPP Proposal.FR Notice.4.20.2017

Samantha, you probably have this. Sarah Dunham sent this around and raises the same points I did. I am talking to Peter Tsirigotis at 9:30.

---

**From:** Tsirigotis, Peter  
**Sent:** Friday, April 28, 2017 9:09 AM  
**To:** McGartland, Al <McGartland.Al@epa.gov>  
**Subject:** FW: CPP Proposal.FR Notice.4.20.2017

---

**From:** Dunham, Sarah  
**Sent:** Friday, April 21, 2017 11:37 AM  
**To:** Schmidt, Lorie <Schmidt.Lorie@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>  
**Cc:** Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Page, Steve <Page.Steve@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; Srinivasan, Gautam <Srinivasan.Gautam@epa.gov>; Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>  
**Subject:** RE: CPP Proposal.FR Notice.4.20.2017

Lorie, Justin, Mandy-

We didn't have any comments on the body of Lorie's draft from yesterday, but v

**Deliberative Process / Ex. 5**

**Deliberative Process / Ex. 5**

I'll note a couple things on those additions.

**Deliberative Process / Ex. 5**

Thanks

**From:** Schmidt, Lorie

**Sent:** Thursday, April 20, 2017 1:38 PM

**To:** Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>

**Cc:** Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; Srinivasan, Gautam <[Srinivasan.Gautam@epa.gov](mailto:Srinivasan.Gautam@epa.gov)>

**Subject:** CPP Proposal.FR Notice.4.20.2017

Justin and Sarah

Here is the draft FR notice for the CPP repeal. My understanding is that the goal is to have a draft that we can send to Ryan tomorrow.

# Deliberative Process / Ex. 5

I have reviewed this. OAR reviewed the earlier draft, but has not reviewed this one. We have not shared this with DOJ.

If you get us comments back by noon Friday, we will incorporate them so that this can go to Ryan.

Justin –

## Deliberative Process / Ex. 5

Happy to talk if anyone has questions.

Elliott – please chime in if I am missing anything we need to convey at this point.

Lorie

Message

---

**From:** Schwab, Justin [schwab.justin@epa.gov]  
**Sent:** 4/27/2017 10:12:54 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** Fwd: CPP draft (will bring you hard copy)  
**Attachments:** CPP Proposal.FR Notice.4.21.17.draft.docx; ATT00001.htm

Sent from my iPhone

Begin forwarded message:

**From:** "Schwab, Justin" <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>  
**Date:** April 21, 2017 at 4:28:27 PM EDT  
**To:** "Jackson, Ryan" <[jackson.ryan@epa.gov](mailto:jackson.ryan@epa.gov)>  
**Subject:** CPP draft (will bring you hard copy)

Message

---

**From:** Schwab, Justin [Schwab.Justin@epa.gov]  
**Sent:** 9/7/2017 9:35:53 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** Fwd: CPP Reg Agenda entry  
**Attachments:** CPP Reg Agenda Entry.docx; ATT00001.htm  
  
**Flag:** Follow up

Sent from my iPhone

Begin forwarded message:

**From:** "Zenick, Elliott" <Zenick.Elliott@epa.gov>  
**Date:** September 7, 2017 at 4:53:03 PM EDT  
**To:** "Schwab, Justin" <Schwab.Justin@epa.gov>, "Srinivasan, Gautam" <Srinivasan.Gautam@epa.gov>, "Schmidt, Lorie" <Schmidt.Lorie@epa.gov>  
**Cc:** "Tsirigotis, Peter" <Tsirigotis.Peter@epa.gov>  
**Subject:** FW: CPP Reg Agenda entry

Justin, below is the email that Peter had sent seeking guidance. I am including him here in case you have any questions.

---

**From:** Tsirigotis, Peter  
**Sent:** Wednesday, August 23, 2017 1:02 PM  
**To:** Koerber, Mike <Koerber.Mike@epa.gov>  
**Cc:** Eck, Janet <Eck.Janet@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>  
**Subject:** CPP Reg Agenda entry

Hi Mike. Attached is the CPP Reg Agenda entry. We wanted to get leadership's input on the agenda. Specifically on 2 entries:

# Deliberative Process / Ex. 5

Of course any other input is welcome. OP has asked that we provide any changes to them by this Friday.

Message

---

**From:** Schwab, Justin [schwab.justin@epa.gov]  
**Sent:** 8/10/2017 7:51:46 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Baptist, Erik [baptist.erik@epa.gov]; Fotouhi, David [fotouhi.david@epa.gov]  
**Subject:** CPP redraft  
**Attachments:** CPP Preamble DRAFT 8.10.2017.docx

Please find attached.

# Deliberative Process / Ex. 5

Message

---

**From:** McGartland, Al [McGartland.Al@epa.gov]  
**Sent:** 6/3/2017 1:28:56 AM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]  
**CC:** Bolen, Brittany [bolen.brittany@epa.gov]  
**Subject:** Re: For review: latest drafts of the CPP documents

You have a great weekend too Sam. And a great trip. The Happy hour hasn't happened yet -- I wanted to make sure you were ok with the concept. Since you will be on travel -- We should do another later this summer -- maybe when cpp gets published!

Sent from my iPhone

On Jun 2, 2017, at 9:15 PM, Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)> wrote:

Al, I just now saw this otherwise I would have joined!

A huge THANK YOU to you and the team for such great and diligent work. Brittany and I appreciate you more than you know.

Have a great weekend!

Sam

Sent from my iPad

On Jun 2, 2017, at 8:40 PM, McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)> wrote:

Well this worked out pretty well. Quite a lot of effort to produce all this in a short time. I'm glad it all worked out and could be done before your travel.

I hope you have a great (and productive) trip. I'm turning to Wotus now. (Just got home).

Oh yea -- Unless you have concerns I'm thinking of doing a happy hour with my team that worked so hard on CPP. -- Alex marten, Elizabeth Kopits, kelly Maguire, robin Jenkins, Ann Ferris and especially Dave Evans all dropped every thing to get this done. If you guys want to join us we can hold off until you return (or we can do it again when you return).

Sent from my iPhone

On Jun 2, 2017, at 2:29 PM, Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)> wrote:

All:

Attached are the final edits from the political team. Please use this version, and send the final package up to OP as soon as possible.

Thanks for all your work.



Best,  
Samantha

---

**From:** Schmidt, Lorie  
**Sent:** Friday, June 02, 2017 12:27 PM  
**To:** Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>  
**Cc:** Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>; Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>; Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>  
**Subject:** RE: For review: latest drafts of the CPP documents

I am not sure who has the pen on the document right now and who is accepting or rejecting OGC's line edits. For that matter, I'm not sure whether all are being accepted or not.

## Deliberative Process / Ex. 5

Lorie Schmidt  
Associate General Counsel, Air and Radiation  
Office of General Counsel  
US Environmental Protection Agency  
(202)564-1681

---

**From:** Schwab, Justin  
**Sent:** Friday, June 02, 2017 11:57 AM  
**To:** Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>  
**Cc:** Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>; Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>; Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>  
**Subject:** Re: For review: latest drafts of the CPP documents

# Deliberative Process / Ex. 5

Sent from my iPhone

On Jun 2, 2017, at 11:55 AM, Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)> wrote:

## Deliberative Process / Ex. 5

Lorie

Lorie Schmidt  
Associate General Counsel, Air and Radiation  
Office of General Counsel  
US Environmental Protection Agency  
(202)564-1681

---

**From:** Schmidt, Lorie  
**Sent:** Friday, June 02, 2017 11:09 AM  
**To:** Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Gunasekara, Mandy  
<[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dunham, Sarah  
<[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh  
<[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha  
<[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin  
<[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany  
<[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Zenick, Elliott  
<[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al  
<[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Page, Steve  
<[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike  
<[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter  
<[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika  
<[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid  
<[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>

**Subject:** Re: For review: latest drafts of the CPP documents

Working on it now.

Sent from my iPhone

On Jun 2, 2017, at 10:53 AM, Rees, Sarah  
<[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)> wrote:

We are ready to send on our end whenever you get the package to us.

---

**From:** Gunasekara, Mandy  
**Sent:** Friday, June 02, 2017 10:31 AM  
**To:** Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>  
**Cc:** Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>; Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>  
**Subject:** Re: For review: latest drafts of the CPP documents

I talked to Justin about these issues and will defer to his final call on the edits. Once that is done, let's send this to OMB.

Sent from my iPhone

On Jun 2, 2017, at 9:53 AM, Schmidt, Lorie  
<[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)> wrote:

Schmidt, Lorie has shared a OneDrive for Business file with you. To view it, click the link below.

<image00001.png> CPP Repeal Proposal.FR Notice.5.31.17.docx

Please find attached our reactions to Mandy's comments. A few things to note:

**Deliberative Process / Ex. 5**

## **Deliberative Process / Ex. 5**

Let us know if you would like to discuss.

Thanks,

Lorie

Lorie Schmidt

Associate General Counsel, Air and  
Radiation  
Office of General Counsel  
US Environmental Protection Agency  
(202)564-1681

---

**From:** Gunasekara, Mandy  
**Sent:** Wednesday, May 31, 2017 1:04 PM  
**To:** Dunham, Sarah  
<[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>; Lewis, Josh  
<[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis,  
Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>;  
Schwab, Justin  
<[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen,  
Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>;  
Schmidt, Lorie  
<[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick,  
Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>;  
McGartland, Al  
<[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah  
<[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>;  
Koerber, Mike  
<[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis,  
Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>;  
Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>;  
Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>  
**Subject:** RE: For review: latest drafts of  
the CPP documents

The attached includes my edits (tracked  
changes starting page 5). Please  
incorporate these into the final version.

---

**From:** Dunham, Sarah  
**Sent:** Wednesday, May 31, 2017 12:01 PM  
**To:** Gunasekara, Mandy  
<[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Lewis,  
Josh <[Lewis.Josh@epa.gov](mailto:Lewis.Josh@epa.gov)>; Dravis,  
Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>;  
Schwab, Justin  
<[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen,  
Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>;  
Schmidt, Lorie  
<[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick,  
Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>;  
McGartland, Al  
<[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah  
<[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>;  
Koerber, Mike

<Koerber.Mike@epa.gov>; Tsirigotis,  
Peter <Tsirigotis.Peter@epa.gov>;  
Sasser, Erika <Sasser.Erika@epa.gov>;  
Harvey, Reid <Harvey.Reid@epa.gov>  
**Subject:** RE: For review: latest drafts of  
the CPP documents

Thank you Mandy—What you laid out  
below is consistent with how we are  
proceeding.

For a little more context on the work  
that is ongoing, OAR and OP have been  
working together on both documents:

## Deliberative Process / Ex. 5

---

**From:** Gunasekara, Mandy  
**Sent:** Wednesday, May 31, 2017 10:18  
AM  
**To:** Lewis, Josh <Lewis.Josh@epa.gov>;  
Dravis, Samantha  
<dravis.samantha@epa.gov>; Schwab,  
Justin <schwab.justin@epa.gov>; Bolen,  
Brittany <bolen.brittany@epa.gov>;  
Schmidt, Lorie  
<Schmidt.Lorie@epa.gov>; Zenick,  
Elliott <Zenick.Elliott@epa.gov>;  
McGartland, Al  
<McGartland.Al@epa.gov>; Rees, Sarah  
<rees.sarah@epa.gov>  
**Cc:** Page, Steve <Page.Steve@epa.gov>;  
Koerber, Mike  
<Koerber.Mike@epa.gov>; Tsirigotis,  
Peter <Tsirigotis.Peter@epa.gov>;  
Sasser, Erika <Sasser.Erika@epa.gov>;  
Harvey, Reid <Harvey.Reid@epa.gov>;  
Dunham, Sarah  
<Dunham.Sarah@epa.gov>

**Subject:** RE: For review: latest drafts of the CPP documents

I'd like to make sure we are all on the same page regarding CPP. This is my understanding of the status. Please let me know if any of this needs modification:

## Deliberative Process / Ex. 5

Best,  
Mandy

---

**From:** Lewis, Josh  
**Sent:** Friday, May 26, 2017 3:00 PM  
**To:** Gunasekara, Mandy  
<[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>; Schmidt, Lorie <[Schmidt.Lorie@epa.gov](mailto:Schmidt.Lorie@epa.gov)>; Zenick, Elliott <[Zenick.Elliott@epa.gov](mailto:Zenick.Elliott@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Rees, Sarah <[rees.sarah@epa.gov](mailto:rees.sarah@epa.gov)>  
**Cc:** Page, Steve <[Page.Steve@epa.gov](mailto:Page.Steve@epa.gov)>; Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Tsirigotis, Peter <[Tsirigotis.Peter@epa.gov](mailto:Tsirigotis.Peter@epa.gov)>; Sasser, Erika <[Sasser.Erika@epa.gov](mailto:Sasser.Erika@epa.gov)>; Harvey, Reid <[Harvey.Reid@epa.gov](mailto:Harvey.Reid@epa.gov)>; Dunham, Sarah <[Dunham.Sarah@epa.gov](mailto:Dunham.Sarah@epa.gov)>  
**Subject:** For review: latest drafts of the CPP documents

Attached are the latest drafts of the CPP Rescission Notice Preamble and the RIA. Sarah and others in OAR are still reviewing one/both of these, but we wanted you to have the latest drafts before the long weekend.

A few notes on the preamble:

**Deliberative Process / Ex. 5**

A few important notes on the RIA:

**Deliberative Process / Ex. 5**



## **Deliberative Process / Ex. 5**

We anticipate having the next draft of the RIA ready by COB Wednesday, pending comments received from this review.

Josh

<CPP Repeal Proposal.FR Notice.6.2.2017-Dravis Edits.docx>

Message

---

**From:** Rees, Sarah [rees.sarah@epa.gov]  
**Sent:** 6/8/2017 10:37:10 PM  
**To:** McGartland, Al [McGartland.Al@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Corrales, Mark [Corrales.Mark@epa.gov]  
**Subject:** RE: landfills  
**Attachments:** EO12866\_Landfills NSPS Stay 2060-AT60 Proposal\_20170526\_OMB comments (00....docx

Hi folks – I've attached the comments. Also below is a summary from Jan Gilbreath who is the staff person covering this for ORPM. Al – Elizabeth has been involved from your shop, and I know that Jan has worked hard to ensure NCEE is invited to any OMB meetings – at least the ones we are aware of.

Al – I think the proprietary nature of the cost model in the RIA is tripping us up based on Jan's report.

This update is from 11:30am today; there was apparently another call with OMB and DOJ later in the day where DOJ reiterated the need for a better justification for linking the long term stays to the RTR timing – that now appears to be the biggest issue outstanding:

~~~~~  
OAQPS is still working on the OMB pass-back for the two landfills long-term stays. The OAQPS team working on this still does not know when it will have a response to OMB, but certainly not this week.

The issues at play:

## Deliberative Process / Ex. 5

DOJ also had asked EPA to better justify the reason for linking the long-term stays to a NESHAP RTR affecting some of the HAP for landfills. That NESHAP RTR won't be completed for three years.

**Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

## Deliberative Process / Ex. 5

---

**From:** McGartland, Al  
**Sent:** Thursday, June 08, 2017 5:22 PM  
**To:** Bolen, Brittany <bolen.brittany@epa.gov>  
**Cc:** Rees, Sarah <rees.sarah@epa.gov>  
**Subject:** Re: landfills

It would have need good if someone for NCEE would be invited to these.

Sent from my iPhone

On Jun 8, 2017, at 5:08 PM, Bolen, Brittany <bolen.brittany@epa.gov> wrote:

Hey folks, Sarah D. called for a last minute meeting today on landfills that I was not able to attend because of a scheduling conflict. Justin attended and said that it sounds like there is a hang-up with

OMB on the costs and benefits. Are you familiar with the OMB exchange? Did OMB send over written comments? If so, can I see them?

Thanks!

Brittany

**Brittany Bolen**

Deputy Associate Administrator, Office of Policy

U.S. Environmental Protection Agency

(202) 564-3291

[Bolen.Brittany@epa.gov](mailto:Bolen.Brittany@epa.gov)

Message

---

**From:** Schwab, Justin [schwab.justin@epa.gov]  
**Sent:** 8/4/2017 5:55:54 PM  
**To:** Jackson, Ryan [jackson.ryan@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Baptist, Erik [baptist.erik@epa.gov]; Fotouhi, David [fotouhi.david@epa.gov]  
**Subject:** FW: Motion for Summary Vacatur of CAA Section 307 Landfill Stay  
**Attachments:** Motion for Stay Vacatur.pdf; Attachments.pdf

See attached and below.

Challengers in the 90-day landfills Section 307 stay case waited a long time to file for summary vacatur, but they pulled the trigger today (the deadline for them to make that type of motion).

Under the court's rules, we have 10 days to respond (Aug. 14).

We may be able to get an extension of time. And the 90-day stay expires at the end of this month anyway (Aug. 29).

We will analyze the motion and assess as soon as we are able.

Please call if you have immediate questions Personal Phone / Ex. 6

Best,

Justin

**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

No. 17-1157

---

NATURAL RESOURCES DEFENSE COUNCIL, CLEAN AIR COUNCIL,  
CLEAN WISCONSIN, and CONSERVATION LAW FOUNDATION,

*Petitioners,*

v.

E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, and  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

*Respondents.*

---

**ATTACHMENTS TO  
MOTION FOR SUMMARY VACATUR**

---

David D. Doniger  
Melissa J. Lynch  
Natural Resources Defense Council  
1152 15th Street NW, Suite 300  
Washington, DC 20005  
Telephone: (202) 289-2403  
ddoniger@nrdc.org  
llynch@nrdc.org  
*Counsel for Natural Resources  
Defense Council*

Ann Brewster Weeks  
James P. Duffy  
Clean Air Task Force  
18 Tremont Street, Suite 530  
Boston, MA 02018  
Telephone: (617) 624-0234  
aweeks@catf.us  
jduffy@catf.us  
*Counsel for Clean Air Council,  
Clean Wisconsin, and  
Conservation Law Foundation*

August 4, 2017

| <b>Attach.</b> | <b>Title</b>                                                                                                                                                                                                                  | <b>Page</b> |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>A</b>       | U.S. EPA, Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; <b>Stay, 82 Fed. Reg. 24,878 (May 31, 2017)</b>              | 1           |
| <b>B</b>       | U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; <b>Final Rule, 81 Fed. Reg. 59,276 (Aug. 29, 2016)</b> (excerpts)                                                                     | 4           |
| <b>C</b>       | U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; <b>Final Rule, 81 Fed. Reg. 59,332 (Aug. 29, 2016)</b> (excerpts)                                                                                     | 21          |
| <b>D</b>       | U.S. EPA, Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills; <b>Final Rule and Guideline, 61 Fed. Reg. 9,905 (Mar. 12, 1996)</b> (excerpts) | 32          |
| <b>E</b>       | U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; <b>Proposed Rule, 79 Fed. Reg. 41,796 (July 17, 2014)</b> (excerpts)                                                                                  | 41          |
| <b>F</b>       | U.S. EPA, Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills; <b>Proposed Rules, 80 Fed. Reg. 52,100 (Aug. 27, 2015)</b> (excerpts)                                      | 51          |
| <b>G</b>       | U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; <b>Supplemental Proposal, 80 Fed. Reg. 52,162 (Aug. 27, 2015)</b> (excerpts)                                                                          | 61          |
| <b>H</b>       | Nat'l Waste & Recycling Ass'n, et al., <b>Petition for Rulemaking, Reconsideration, and Administrative Stay (Oct. 27, 2016)</b> (excerpts)                                                                                    | 63          |
| <b>I</b>       | Nat'l Waste & Recycling Ass'n, et al., <b>Petition for Rulemaking, Reconsideration, and Administrative Stay; Resubmission (Jan. 30, 2017)</b>                                                                                 | 74          |
| <b>J</b>       | <b>Letter from E. Scott Pruitt, EPA Administrator, to Carroll W. McGuffey, Republic Services, et al. (May 5, 2017)</b>                                                                                                        | 78          |
| <b>K</b>       | <b>Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, EPA Administrator (June 14, 2017)</b>                                                                                                             | 81          |

|          |                                                                                                                                                                                                                                                                                    |     |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>L</b> | <b>Letter from Ann Weeks</b> , Clean Air Task Force, et al., to E. Scott Pruitt, EPA Administrator ( <b>July 10, 2017</b> )                                                                                                                                                        | 86  |
| <b>M</b> | <b>Letter from E. Scott Pruitt</b> , EPA Administrator, to David Doniger, Natural Resources Defense Council ( <b>July 11, 2017</b> )                                                                                                                                               | 89  |
| <b>N</b> | <b>Office of Management and Budget, Notice</b> Pending EO 12866 Regulatory Review: Extension of Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017) | 91  |
| <b>O</b> | <b>Office of Management and Budget, Notice</b> Pending EO 12866 Regulatory Review: Stay of Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)                                                                               | 93  |
| <b>P</b> | <b>Declaration of Gina Trujillo</b> , Natural Resources Defense Council                                                                                                                                                                                                            | 95  |
| <b>Q</b> | <b>Declaration of Joseph O. Minott</b> , Clean Air Council                                                                                                                                                                                                                         | 98  |
| <b>R</b> | <b>Declaration of Kathryn A. Nekola</b> , Clean Wisconsin                                                                                                                                                                                                                          | 109 |
| <b>S</b> | <b>Declaration of Sara Molyneaux</b> , Conservation Law Foundation                                                                                                                                                                                                                 | 120 |
| <b>T</b> | <b>Declaration of Craig Gooding</b> , Natural Resources Defense Council Member                                                                                                                                                                                                     | 129 |
| <b>U</b> | <b>Declaration of Susan Almy</b> , Conservation Law Foundation Member                                                                                                                                                                                                              | 134 |
| <b>V</b> | <b>Declaration of Douglas I. Foy</b> , Conservation Law Foundation                                                                                                                                                                                                                 | 141 |
| <b>W</b> | U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; <b>Advanced Notice of Proposed Rulemaking, 79 Fed. Reg. 41,771 (July 17, 2014)</b> (excerpts)                                                                                              | 149 |
| <b>X</b> | <b>Waste Management, Comments</b> on Supplemental Proposal ( <b>Oct. 26, 2015</b> ), Doc. No. EPA-HQ-OAR-2003-0215-0198 (excerpts)                                                                                                                                                 | 156 |
| <b>Y</b> | <b>Waste Management, Comments</b> on Advanced Notice of Proposed Rulemaking ( <b>Sept. 15, 2014</b> ), Doc. No. EPA-HQ-OAR-2014-0451-0037 (excerpts)                                                                                                                               | 164 |
| <b>Z</b> | <b>Republic Services, Comments</b> on Proposed Rulemaking ( <b>Oct. 26, 2015</b> ), Doc. No. EPA-HQ-OAR-2014-0451-0176 (excerpts)                                                                                                                                                  | 168 |

## Attachment A

U.S. EPA, Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Stay, 82 Fed. Reg. 24,878 (May 31, 2017)



Ohio nonattainment area has been approved as submitted on June 29, 2016.

(e) EPA is approving the existing controls and maintenance provisions in the permit to install for the Ferro facility including the preventative maintenance plan, 0.3 tpy combined emissions limit for units P064 through P069 as well as the base control devices and upgrades, in addition the 0.009 tpy limit for P071

and all base control devices and upgrades for units P001, P071, P100, P101, and P951 as fulfilling the RACM/ RACT 172(c)(1) requirement.

**PART 81—DESIGNATION OF AREAS FOR AIR QUALITY PLANNING PURPOSES**

■ 4. The authority citation for part 81 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

■ 5. Section 81.336 is amended by revising the entry for “Cleveland, OH:” in the table entitled “Ohio—2008 Lead NAAQS” to read as follows:

**§81.336 Ohio.**

\* \* \* \* \*

| OHIO—2008 LEAD NAAQS                                                                                                                                                                                      |  |  |  |  | Designation for the 2008 NAAQS <sup>a</sup> |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|---------------------------------------------|-------------|
| Designated area                                                                                                                                                                                           |  |  |  |  | Date <sup>1</sup>                           | Type        |
| Cleveland, OH:                                                                                                                                                                                            |  |  |  |  |                                             |             |
| Cuyahoga County (part) .....                                                                                                                                                                              |  |  |  |  | 5/31/2017                                   | Attainment. |
| The portions of Cuyahoga County that are bounded on the west by Washington Park Blvd./ Crete Ave./East 49th St., on the east by East 71st St., on the north by Fleet Ave., and on the south by Grant Ave. |  |  |  |  |                                             |             |
| * * * * *                                                                                                                                                                                                 |  |  |  |  |                                             |             |

<sup>a</sup> Includes Indian Country located in each county or area, except as otherwise specified.  
<sup>1</sup> December 31, 2011, unless otherwise noted.

[FR Doc. 2017-10968 Filed 5-30-17; 8:45 am]  
 BILLING CODE 6560-50-P

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 60

[EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451; FRL-9963-19-OAR]

RIN 2060-AT62

### Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency (EPA).  
**ACTION:** Stay.

**SUMMARY:** By a letter dated May 5, 2017, the Administrator announced the convening of a proceeding for reconsideration of certain requirements in the final rules, “Standards of Performance for Municipal Solid Waste Landfills,” and “Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills,” both published on August 29, 2016. In this action, the EPA is staying subparts, which were added or revised by the two rules, for 90 days pending reconsideration.

**DATES:** Title 40 CFR part 60, subpart Cf, and 40 CFR part 60, subpart XXX, are stayed from May 31, 2017 until August 29, 2017.

**ADDRESSES:** Electronic copies of this document are available on the EPA’s Web site at <https://www.epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-new-source-performance-standards>. Copies of this document are also available at <https://www.regulations.gov>, at Docket ID No. EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451.

**FOR FURTHER INFORMATION CONTACT:** Mr. Peter Tsigotis, Sector Policies and Programs Division (D205-01), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (888) 627-7764; email address: [airaction@epa.gov](mailto:airaction@epa.gov).

#### SUPPLEMENTARY INFORMATION:

##### I. Background

On July 14, 2016, the U.S. Environmental Protection Agency (EPA) Administrator signed a final rule establishing new source performance standards (NSPS) intended to reduce emissions of landfill gas from new, modified, and reconstructed municipal solid waste (MSW) landfills, thereby updating standards that were issued in 1996. In a separate action, the Administrator also signed a final rule revising guidelines for reducing emissions from existing MSW landfills, thereby updating the previous emissions guidelines (EG), which also were issued in 1996. The NSPS are codified at 40 CFR part 60, subpart XXX, and the EG are codified at 40 CFR part 60, subpart Cf. For further information on these

2016 rules, see 81 FR 59332 and 81 FR 59276 (August 29, 2016).

On October 27, 2016, a number of interested parties submitted administrative petitions to the EPA seeking reconsideration of various aspects of the 2016 rules pursuant to section 307(d)(7)(B) of the Clean Air Act (CAA) (42 U.S.C. 7607(d)(7)(B)).<sup>1</sup> Under section 307(d)(7)(B) of the CAA, the Administrator shall convene a reconsideration proceeding if, in the Administrator’s judgment, the petitioner raises an objection to a rule that was impracticable to raise during the comment period or if the grounds for the objection arose after the comment period, but within the period for judicial review. In either case, the Administrator must also conclude that the objection is of central relevance to the outcome of the rule. The Administrator may stay the effectiveness of the rule for up to 3 months during such reconsideration.

In a letter dated May 5, 2017, based on the criteria in CAA section 307(d)(7)(B), the Administrator convened a proceeding for reconsideration. The May 5, 2017, letter announced the convening of an administrative reconsideration proceeding to reconsider the following topics from one petition: (1) Tier 4 surface emission monitoring; (2) annual liquids reporting; (3) corrective action

<sup>1</sup> Copies of these petitions are included in the docket for the 2016 rules, Docket ID No. EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451.

timeline procedures; (4) overlapping applicability with other rules; (5) the definition of cover penetration; and (6) design plan approval. As part of the proceeding, the EPA will prepare a notice of proposed rulemaking that will provide the petitioners and the public an opportunity to comment on the issues identified in that letter. As explained in the letter, the EPA has not taken action on the remaining issues in the petitions for reconsideration. A copy of the letter is included in the dockets for this rule, Docket ID No. EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451.

The EPA convened a proceeding for reconsideration based on the determination that some of the objections raised in the petition for reconsideration met the criteria set forth in CAA section 307(d)(7)(B), 42 U.S.C. 7607(d)(7)(B), which requires the Administrator to convene a proceeding for reconsideration of a rule when the person raising an objection to a rule can demonstrate: (1) That it was either impractical to raise the objection during the period for public comment or that the grounds for the objection arose after the period for public comment; and (2) that the objection is of central relevance to the outcome of the rule. In particular, we determined that the tier 4 surface emissions monitoring (SEM) issues raised in the petition for reconsideration met those criteria. The proposed rule included tier 4 SEM as an optional monitoring method; however, the final rule imposed restrictions on the use of tier 4 SEM, e.g., limits on wind speed, the use of wind barriers, and restricting the use of tier 4 SEM to landfills with non-methane organic compounds emission rates between 34 and 50 megagrams per year, that were not included in the proposal. While we believe that the restrictions are appropriate in light of the potential impact of the results of tier 4 SEM, we recognize that they were added without the benefit of public comment. Thus, we find that the petitioners have demonstrated that it was impractical to raise the objection during the period for public comment. We also find that the objection to the restrictions on the use of tier 4 SEM is of central relevance to the outcome of the rule. Tier 4 SEM can be used as a site-specific methodology for determining whether and when the requirement to install a gas collection and control system is triggered. The restrictions limit an owner's/operator's ability to use tier 4 SEM for those purposes, thereby reducing intended flexibility in the rule. If we had the benefit of public comment on the

restrictions, we might have structured the rule in such a way as to minimize any potential impacts on flexibility.

## II. Stay of Subparts Cf and XXX

By this action, the EPA is staying the subparts added or revised by two final rules, "Standards of Performance for Municipal Solid Waste Landfills," 81 FR 59332 and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," 81 FR 59276 for 90 days pursuant to its authority under section 307(d)(7)(B) of the CAA. We believe that it is necessary to stay the subparts in their entirety because the tier 4 SEM provisions in the two rules are integral to how the rules function as a whole. The ability to use tier 4 SEM is a primary aspect of the flexibility we intended to include in the rule. Tier 4 SEM can be used to determine on a site-specific basis whether and when the requirement to install and operate a gas collection and control system is triggered. The tier 4 SEM provision provides flexibility in complying with other requirements in the rules that does not otherwise exist. As a result, we believe that it is appropriate to stay the subparts in their entirety while we address the tier 4 SEM issues and the other issues for which the Administrator has granted reconsideration. Therefore, pursuant to section 307(d)(7)(B) of the CAA, the EPA is staying 40 CFR part 60, subpart XXX, and 40 CFR part 60, subpart Cf, for 90 days.

This stay will remain in place until August 29, 2017.

### List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

Dated: May 22, 2017.

E. Scott Pruitt,  
Administrator.

40 CFR part 60 is amended as follows:

### PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

#### Subpart Cf—[Stayed]

■ 2. Subpart Cf is stayed from May 31, 2017 until August 29, 2017.

#### Subpart XXX—[Stayed]

■ 2. Subpart XXX is stayed from May 31, 2017 until August 29, 2017.

[FR Doc. 2017-10752 Filed 5-30-17; 8:45 am]

BILLING CODE 6560-50-P

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

#### 50 CFR Part 648

[Docket No. 161118999-7280-02]

RIN 0648-XF410

### Fisheries of the Northeastern United States; Atlantic Sea Scallop Fishery; Closure of the Nantucket Lightship Access Area to General Category Individual Fishing Quota Scallop Vessels

**AGENCY:** National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Commerce.

**ACTION:** Temporary rule; closure.

**SUMMARY:** NMFS announces that the Nantucket Lightship Scallop Access Area will close to Limited Access General Category Individual Fishing Quota scallop vessels for the remainder of the 2017 fishing year as of the effective date below. No vessel issued a Limited Access General Category Individual Fishing Quota permit may fish for, possess, or land scallops from the Nantucket Lightship Scallop Access Area. Regulations require this action once it is projected that 100 percent of trips allocated to the Limited Access General Category Individual Fishing Quota scallop vessels for the Nantucket Lightship Scallop Access Area will be taken.

**DATES:** Effective 0001 hr local time, May 30, 2017, through March 31, 2018.

**FOR FURTHER INFORMATION CONTACT:** Shannah Jaburek, Fishery Management Specialist, (978) 282-8456.

**SUPPLEMENTARY INFORMATION:** Regulations governing fishing activity in the Sea Scallop Access Areas can be found in 50 CFR 648.59 and 648.60. These regulations authorize vessels issued a valid Limited Access General Category (LAGC) Individual Fishing Quota (IFQ) scallop permit to fish in the Nantucket Lightship Scallop Access Area under specific conditions, including a total of 837 trips that may be taken during the 2017 fishing year. Section 648.59(g)(3)(iii) requires the Nantucket Lightship Scallop Access

## Attachment B

U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; **Final Rule, 81 Fed. Reg. 59,276 (Aug. 29, 2016)** (excerpts)

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2014-0451; FRL-9949-55-OAR]

RIN 2060-AS23

**Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is finalizing a new subpart that updates the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Emission Guidelines). The EPA reviewed the landfills Emission Guidelines based on changes in the landfills industry since the Emission Guidelines were promulgated in 1996. The EPA's review of the Emission Guidelines for municipal solid waste (MSW) landfills considered landfills that accepted waste after November 8, 1987, and commenced construction, reconstruction, or modification on or before July 17, 2014. Based on this review, the EPA has determined that it is appropriate to revise the Emission Guidelines to reflect changes to the population of landfills and the results of an analysis of the timing and methods for reducing emissions. This action will achieve additional reductions in emissions of landfill gas and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This action also incorporates new data and information received in response to an advanced notice of proposed rulemaking and a proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system.

The revised Emission Guidelines, once implemented through revised state plans or a revised federal plan, will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. Landfills are a significant source of methane, which is a potent greenhouse gas pollutant. These avoided emissions will improve air quality and reduce the potential for public health and welfare effects associated with exposure to landfill gas emissions.

**DATES:** This final rule is effective on October 28, 2016.

The incorporation by reference of certain publications listed in the

regulations is approved by the Director of the Federal Register as of October 28, 2016.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2014-0451. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this final rule, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143-05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-3154; fax number: (919) 541-0246; email address: [ward.hillary@epa.gov](mailto:ward.hillary@epa.gov).

**SUPPLEMENTARY INFORMATION:**

*Acronyms and Abbreviations.* The following acronyms and abbreviations are used in this document.

ANPRM Advance notice of proposed rulemaking  
ANSI American National Standards Institute  
BMP Best management practice  
Btu British thermal unit  
CAA Clean Air Act  
CBI Confidential business information  
CDX Central Data Exchange  
CEDRI Compliance and Emissions Data Reporting Interface  
CFR Code of Federal Regulations  
CO<sub>2</sub> Carbon dioxide  
CO<sub>2e</sub> Carbon dioxide equivalent  
EPA Environmental Protection Agency  
ERT Electronic Reporting Tool  
FTD Flame ionization detector  
GCCS Gas collection and control system  
GHG Greenhouse gas  
GHGRP Greenhouse Gas Reporting Program  
GWP Global warming potential  
HAP Hazardous air pollutant  
HOV Higher operating value  
IAMS Integrated assessment models  
ICR Information collection request  
IPCC Intergovernmental Panel on Climate Change  
IWG Interagency working group  
LFG Landfill gas  
LFGCost Landfill Gas Energy Cost Model  
m<sup>3</sup> Cubic meters  
Mg Megagram  
Mg/yr Megagram per year  
mph Miles per hour  
MSW Municipal solid waste  
mtCO<sub>2e</sub> Metric tons of carbon dioxide equivalent

MW Megawatt  
MWh Megawatt hour  
NAICS North American Industry Classification System  
NESHAP National Emission Standards for Hazardous Air Pollutants  
NMOC Nonmethane organic compound  
NRC National Research Council  
NSPS New source performance standards  
NTTAA National Technology Transfer and Advancement Act  
OAQPS Office of Air Quality Planning and Standards  
OMB Office of Management and Budget  
PM Particulate matter  
PM<sub>2.5</sub> Fine particulate matter  
ppm Parts per million  
ppmvd Parts per million by dry volume  
RCRA Resource Conservation and Recovery Act  
RD&D Research, development, and demonstration  
RFA Regulatory Flexibility Act  
SBAR Small Business Advocacy Review  
SC-CH<sub>4</sub> Social cost of methane  
SC-CO<sub>2</sub> Social cost of carbon dioxide  
SEM Surface emissions monitoring  
SO<sub>2</sub> Sulfur dioxide  
SSM Startup, shutdown, and malfunction  
Tg Teragram  
TIP Tribal implementation plan  
TTN Technology Transfer Network  
U.S. United States  
USGCRP U.S. Global Change Research Program  
VCS Voluntary consensus standard  
VOC Volatile organic compound

*Organization of This Document.* The following outline is provided to aid in locating information in this preamble.

- I. Executive Summary
  - A. Purpose of Regulatory Action
  - B. Summary of Major Provisions
  - C. Costs and Benefits
- II. General Information
  - A. Does this action apply to me?
  - B. Where can I get a copy of this document and other related information?
- III. Background
  - A. Landfill Gas Emissions and Climate Change
  - B. What are the public health and welfare effects of landfill gas emissions?
  - C. What is the EPA's authority for reviewing the Emission Guidelines?
  - D. What is the purpose and scope of this action?
  - E. How would the changes in applicability affect sources currently subject to subparts Cc and WWW?
- IV. Summary of the Final Emission Guidelines
  - A. What are the control requirements?
  - B. What are the monitoring, recordkeeping, and reporting requirements?
  - C. Startup, Shutdown, and Malfunction Provisions
- V. Summary of Significant Changes Since Proposal
  - A. Changes to Monitoring, Recordkeeping, and Reporting
  - B. Tier 4
  - C. Changes to Address Closed or Non-Productive Areas
  - D. Startup, Shutdown, and Malfunction Provisions

- E. Other Corrections and Clarifications
- VI. Rationale for Significant Changes Since Proposal
  - A. Changes to Monitoring, Recordkeeping, and Reporting
  - B. Tier 4
  - C. Changes to Address Closed or Non-Productive Areas
  - D. Startup, Shutdown, and Malfunction Provisions
  - E. Other Corrections and Clarifications
- VII. Impacts of This Final Rule
  - A. What are the air quality impacts?
  - B. What are the water quality and solid waste impacts?
  - C. What are the secondary air impacts?
  - D. What are the energy impacts?
  - E. What are the cost impacts?
  - F. What are the economic impacts?
  - G. What are the benefits?
- VIII. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
  - B. Paperwork Reduction Act (PRA)
  - C. Regulatory Flexibility Act (RFA)
  - D. Unfunded Mandates Reform Act (UMRA)
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
  - H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR part 51
  - J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
  - K. Congressional Review Act (CRA)

## I. Executive Summary

### A. Purpose of Regulatory Action

This action finalizes changes to the MSW landfills Emission Guidelines resulting from the EPA's review of the Emission Guidelines under Clean Air Act (CAA) section 111. The EPA's review identified a number of advances in technology and operating practices for reducing emissions of landfill gas (LFG) and the final changes are based on our evaluation of those advances and our understanding of LFG emissions. The resulting changes to the Emission Guidelines will achieve additional reductions in emissions of LFG and its components, including methane. This final rule is consistent with the President's 2013 Climate Action Plan,<sup>1</sup> which directs federal agencies to focus on "assessing current emissions data,

addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions." The final rule is also consistent with the President's Methane Strategy,<sup>2</sup> which directs the EPA's regulatory and voluntary programs to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs. These directives are discussed in detail in section III.A of this preamble. This regulatory action also resolves or clarifies several implementation issues that were previously addressed in amendments proposed on May 23, 2002 (67 FR 36475) and September 8, 2006 (71 FR 53271).

### 1. Need for Regulatory Action

The EPA reviewed the Emission Guidelines to determine the potential for achieving additional reductions in emissions of LFG. Significant changes have occurred in the landfill industry over time, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. Based on the EPA's review, we are finalizing changes to the Emission Guidelines. The changes will achieve additional emission reductions of LFG and its components (including methane), which will reduce air pollution and the resulting harm to public health and welfare. Landfills are a significant source of methane, a potent greenhouse gas, for which there are cost-effective means of reduction, so this rule is an important element of the United States' work to reduce emissions that are contributing to climate change. In addition, the changes provide more effective options for demonstrating compliance, and provide clarification of several implementation issues raised during the amendments proposed in 2002 and 2006. Additional information supporting the EPA's decision to review the Emission Guidelines can be found in Section I.A. of the Emission Guidelines proposal (80 FR 52100, August 27, 2015).

### 2. Legal Authority

The EPA is not statutorily obligated to conduct a review of the Emission Guidelines, but has the discretion to do so when circumstances indicate that it is appropriate. The EPA determined that it was appropriate to review the

Emission Guidelines based on changes in the landfill industry and changes in operation of landfills, including the size, trends in gas collection and control system installations, and age of landfills since the Emission Guidelines were promulgated in 1996. The EPA compiled new information on landfills through data collection efforts for a statutorily mandated review of the existing new source performance standards (NSPS) (40 CFR part 60, subpart WWW), public comments received on the NSPS proposal (79 FR 41796, July 17, 2014), public comments received on the Advance Notice of Proposed Rulemaking (ANPRM) (79 FR 41772, July 17, 2014), and public comments received on the Emission Guidelines proposal (80 FR 52100, August 27, 2015) for use in reviewing the Emission Guidelines. This information allowed the EPA to assess current practices, emissions, and the potential for additional emission reductions.

The EPA interprets CAA section 111(d) as providing discretionary authority to update emission guidelines, and by extension to require states to update standards of performance, in appropriate circumstances. The EPA believes this is the best, and perhaps only, permissible interpretation of the CAA. It is consistent with the gap filling nature of section 111(d), the general purposes of the CAA to protect and enhance air quality. Moreover, this is supported because Congress's grant of authority to issue regulations carries with it the authority to amend or update regulations<sup>3</sup> that they have issued.<sup>4</sup> "Regulatory agencies do not establish rules of conduct to last forever; they are supposed, within the limits of the law and of fair and prudent administration, to adapt their rules and practices to the Nation's needs in a volatile, changing economy. They are neither required nor supposed to regulate the present and the future within the inflexible limits of yesterday."<sup>5</sup>

To interpret the CAA otherwise would mean that Congress intended to

<sup>3</sup> Congress has provided the Agency with broad authority to issue regulations "as necessary to carry out [her] functions under" the Act. This broad grant of authority further supports the reasonableness of EPA's interpretation.

<sup>4</sup> See *Trujillo v. General Electric Co.*, 621 F.2d 1084, 1086 (10th Cir. 1980) ("Administrative agencies have an inherent authority to reconsider their own decisions, since the power to decide in the first instance carries with it the power to reconsider.") (citing *Albertson v. FCC*, 182 F.2d 397, 399 (D.C. Cir. 1950)). See 621 F.2d at 1088 ("The authority to reconsider may result in some instances, as it did here, in a totally new and different determination.").

<sup>5</sup> *American Trucking Ass'n v. Atchison, Topeka & Santa Fe Ry.*, 387 U.S. 397, 416 (1967).

<sup>1</sup> Executive Office of the President, "The President's Climate Action Plan" June 2013. <https://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>.

<sup>2</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. [https://www.whitehouse.gov/sites/default/files/strategy\\_to\\_reduce\\_methane\\_emissions\\_2014-03-28\\_final.pdf](https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf).

allow existing sources to operate forever without any consideration of the need for updated controls simply because, at some point in the distant past, the EPA had previously required these sources to be regulated. The EPA's interpretation is consistent with the gap filling nature of section 111(d), whereas the opposite interpretation would undermine it. By its terms, section 111(d) was designed to address emissions from existing sources of non-national ambient air quality standards (NAAQS), non-CAA section 112 hazardous air pollutants.<sup>6</sup> A one-off approach would mean that the EPA would be unable to address the threats from these sources even as we improve our understanding of the danger presented by the pollutant at issue or new or improved control options become available. Indeed, this lack of authority would exist even in cases such as the instant one where some affected sources had not yet been required to invest in emission controls.

The overall structure of the CAA also supports EPA's interpretation. The primary goal of the CAA is: "[T]o protect and enhance the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." CAA section 101(b)(1), 42 U.S.C. 7401(b)(1). The CAA goes about this in a number of ways. Under section 111 the chosen approach is through the identification of the best system of emission reduction available to reduce emissions to the atmosphere which takes into account the cost of achieving such reductions and any nonair quality health and environmental impact and energy

requirements. These systems change over time. Where such changes have the effect of substantially reducing harmful air emissions, it would be illogical that the EPA would be precluded from requiring existing sources to update their controls in recognition of those changes, particularly when those sources may continue to operate for decades. Similarly, if, after a rule was finalized, factual information were to arise revealing that the initial standards were too stringent to be met, it would be illogical that EPA would be precluded from revising the standards accordingly. Had Congress intended to preclude the EPA from updating the emission guidelines to reflect changes, it would surely have specifically said so, something it did not do.

The fact that the EPA has the authority to update the emission guidelines does not, however, mean that it is unconstrained in exercising that authority. Rather, the decision whether to update a particular set of emission guidelines must be made on a rule-specific basis after considering the same factors the EPA considered in establishing those guidelines, including the level of reductions achievable and the cost of achieving those reductions, and, as appropriate, taking into account controls sources installed to comply with the initial emission guidelines. The EPA has determined that it is appropriate to update the emission guidelines for municipal solid waste (MSW) landfills. The EPA's final rule is not a requirement to install new and different control equipment (compared to the existing rule), but rather to install the same basic controls, *i.e.*, a well-designed and well-operated landfill gas collection and control system, on an accelerated basis. While this will result in some additional cost, the EPA believes that cost is fully justified given the substantial reduction in emissions of landfill gas and its constituent components, including methane, that will result. As indicated in the final rule, lowering the threshold above which landfill owners/operators must install a gas collection and control system from 50 Mg of non-methane organic compounds (NMOC) per year to 34 Mg/year will result in an additional reduction in NMOC emissions of 1,810 Mg/yr and a concomitant reduction in methane emissions of 0.285 million Mg/yr. In these circumstances, the EPA believes that it not only has the legal authority to update the emission guidelines, but that doing so imminently reasonable.

## B. Summary of Major Provisions

The final Emission Guidelines apply to landfills that accepted waste after November 8, 1987,<sup>7</sup> and that commenced construction, reconstruction, or modification on or before July 17, 2014 (the date of publication of proposed revisions to the landfills NSPS, 40 CFR part 60, subpart XXX). The final rule provisions are described below.

**Thresholds for Installing Controls.** The final Emission Guidelines retain the current design capacity thresholds of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>), but reduce the nonmethane organic compounds (NMOC) emission threshold for the installation and removal of a gas collection and control system (GCCS) from 50 Mg/yr to 34 Mg/yr for landfills that are not closed as of September 27, 2017. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) An MSW landfill that exceeds the design capacity thresholds must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr. Consistent with the existing Emission Guidelines, the owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

**Emission Threshold Determination.** The EPA is finalizing an alternative site-specific emission threshold determination methodology for when a landfill must install and operate a GCCS. This alternative methodology, referred to as "Tier 4," is based on surface emissions monitoring (SEM) and demonstrates whether or not surface emissions are below a specific threshold. The Tier 4 SEM demonstration allows landfills that exceed the threshold using modeled NMOC emission rates using Tier 1 or 2 to demonstrate that actual site-specific surface methane emissions are below a specific threshold. A landfill that can demonstrate that surface emissions are below 500 parts per million (ppm) for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations

<sup>6</sup> CAA subsection 111(d)(1)(A)(i), provides that regulation under CAA section 111(d) is intended to cover pollutants that are not regulated under either the criteria pollutant/NAAQS provisions or section 112 of the CAA. Thus, section 111(d) is designed to regulate pollutants from existing sources that fall in the gap not covered by the criteria pollutant provisions or the hazardous air pollutant provisions. This gap-filling purpose can be seen in the early legislative history of the CAA. As originally enacted in the 1970 CAA, the precursor to CAA section 111 (which was originally section 114) was described as covering pollutants that would not be controlled by the criteria pollutant provisions or the hazardous air pollutant provisions. See S. Committee Rep. to accompany S. 4358 (Sept. 17, 1970), 1970 CAA Legis. Hist. at 420 ("It should be noted that the emission standards for pollutants which cannot be considered hazardous (as defined in section 115 [which later became section 112]) could be established under section 114 [later, section 111]. Thus, there should be no gaps in control activities pertaining to stationary source emissions that pose any significant danger to public health or welfare."); Statement by S. Muskie, S. Debate on S. 4358 (Sept. 21, 1970), 1970 CAA Legis. Hist. at 227 ("[T]he bill [in section 114] provides the Secretary with the authority to set emission standards for selected pollutants which cannot be controlled through the ambient air quality standards and which are not hazardous substances.").

<sup>7</sup> This date in 1987 is the date on which permit programs were established under the Hazardous and Solid Waste Amendments of the Resource, Conservation and Recovery Act (RCRA) which amended the Solid Waste Disposal Act (SWDA), 42 U.S.C. 6901-6992k. This date was also selected as the regulatory cutoff in the Emission Guidelines for landfills no longer receiving wastes because the EPA judged states would be able to identify active facilities as of this date.

indicate that the 34 Mg/yr threshold has been exceeded. Landfills that have calculated NMOC emissions of 50 Mg/yr or greater are not eligible for the Tier 4 emission threshold determination in order to prevent conflicting requirements between subpart Cf and the landfills NESHAP (40 CFR part 63, subpart AAAA). Many landfills that are subject to subpart Cf will also be subject to the landfills NESHAP. The landfills NESHAP requires landfills that exceed the size threshold (2.5 million Mg and 2.5 million m<sup>3</sup>) and exceed the NMOC emissions threshold (50 Mg/yr) to install and operate a GCCS.

**Closed Landfill Subcategory.** Because closed landfills do not produce as much LFG as an active landfill, the EPA is finalizing a separate subcategory for landfills that close on or before September 27, 2017. Landfills in this subcategory will continue to be subject to an NMOC emission threshold of 50 Mg/yr for determining when controls must be installed or can be removed.

**Low LFG Producing Areas.** The EPA is also finalizing criteria for determining when it is appropriate to cap or remove all or a portion of the GCCS. The final criteria for capping or removing all or a portion of the GCCS are: (1) The landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three successive test dates. The final rule does not contain a GCCS removal criterion based on surface emissions monitoring.

**Landfill Gas Treatment.** In the final Emission Guidelines, the EPA has addressed two issues related to LFG treatment. First, the EPA is clarifying that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but may be used for other beneficial uses such as vehicle fuel, production of high-British thermal unit (Btu) gas for pipeline injection, or use as a raw material in a chemical manufacturing process. Second, the EPA is finalizing a definition of *treated landfill gas* that applies to LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart Cf, and defining *treatment system* as a system that filters, de-waters, and compresses LFG for sale or beneficial use. The definition of treatment system allows the level of treatment to be tailored to the type and design of the specific combustion equipment or the other beneficial use such as vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical

manufacturing process in which the LFG is used. Owners or operators must develop a site-specific treatment system monitoring plan that includes monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. They also must keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for the end use of the treated LFG.

**Wellhead Operational Standards.** The EPA is finalizing changes to certain operational standards (*i.e.*, the requirement to meet specific operating limits) for nitrogen/oxygen level at the wellheads. Landfill owners or operators are not required to take corrective action based on exceedances of specified operational standards for nitrogen/oxygen levels at wellheads, but they must continue to monitor and maintain records of nitrogen/oxygen levels on a monthly basis in order to inform any necessary adjustments to the GCCS and must maintain records of monthly readings. The operational standard, corrective action, and corresponding recordkeeping and reporting remain for temperature and maintaining negative pressure at the wellhead.

**Surface Monitoring.** The EPA is finalizing a requirement to monitor all surface penetrations at existing landfills. In final 40 CFR part 60, subpart Cf, landfills must conduct SEM at all cover penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required to be in place and operating according to the operational standards in final 40 CFR part 60, subpart Cf. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis at the specified intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

**Startup, Shutdown, and Malfunction.** The EPA is finalizing a requirement that standards of performance in the Emission Guidelines apply at all times, including periods of startup, shutdown, and malfunction (SSM). The EPA is also finalizing an alternative standard during SSM events: In the event the collection or control system is not operating, the gas mover system must be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere must be

closed within 1 hour of the collection or control system not operating.

**Other Clarifications.** The EPA is finalizing a number of clarifications to address several issues that have been raised by landfill owners or operators during implementation of the current NSPS and Emission Guidelines. These clarifications include adding criteria for when an affected source must update its design plan and clarifying when landfill owners or operators must submit requests to extend the timeline for taking corrective action. The EPA is also updating several definitions in the Emission Guidelines. In addition, while the EPA is not mandating organics diversion, we are finalizing two specific compliance flexibilities in the Emission Guidelines to encourage wider adoption of organics diversion and GCCS best management practices (BMPs) for emission reductions at landfills. These compliance flexibilities are discussed in section V.A.1 and VI.A.1 (wellhead monitoring) and section V.B and section VI.B (Tier 4 emission threshold determination) of this preamble.

### C. Costs and Benefits

The final Emission Guidelines are expected to significantly reduce emissions of LFG and its components, which include methane, volatile organic compounds (VOC), and hazardous air pollutants (HAP). Landfills are a significant source of methane emissions, and in 2014, landfills represented the third largest source of human-related methane emissions in the U.S. This rulemaking applies to existing landfills that commenced construction, modification, or reconstruction on or before July 17, 2014 and accepted waste after 1987. The EPA estimates 1,851 existing landfills that accepted waste after 1987 and opened prior to 2014.

To comply with the emission limits in the final rule, MSW landfill owners or operators are expected to install the least-cost control for collecting, and treating or combusting LFG. The annualized net cost for the final Emission Guidelines is estimated to be \$54.1 million (2012\$) in 2025, when using a 7 percent discount rate. The annualized costs represent the costs compared to no changes to the current Emission Guidelines (*i.e.*, baseline) and include \$92.6 million to install and operate a GCCS, as well as \$0.76 million to complete the corresponding testing and monitoring. These control costs are offset by \$39.3 million in revenue from electricity sales, which is incorporated into the net control costs for certain landfills that are expected to generate revenue by using the LFG to produce electricity.



Installation of a GCCS to comply with the 34 Mg/yr NMOC emissions threshold at open landfills would achieve reductions of 1,810 Mg/yr NMOC and 285,000 metric tons methane (about 7.1 million metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e)) beyond the baseline in year 2025. In addition, the final rule is expected to result in the net reduction of an additional 277,000 Mg CO<sub>2</sub>, due to reduced demand for electricity from the grid as landfills generate electricity from LFG. The NMOC portion of LFG can contain a variety of air pollutants, including VOC and various organic HAP. VOC emissions are precursors to both fine particulate matter (PM<sub>2.5</sub>) and ozone formation. These pollutants, along with methane, are associated with substantial health effects, welfare effects, and climate effects. The EPA expects that the reduced emissions will result in improvements in air quality and lessen the potential for health effects associated with exposure to air pollution related emissions, and result

in climate benefits due to reductions of the methane component of LFG.

The EPA estimates that the final rule's estimated methane emission reductions and secondary CO<sub>2</sub> emission reductions in the year 2025 would yield global monetized climate benefits of \$200 million to approximately \$1.2 billion, depending on the discount rate. Using the average social cost of methane (SC-CH<sub>4</sub>) and the average social cost of CO<sub>2</sub> (SC-CO<sub>2</sub>), each at a 3-percent discount rate, results in an estimate of about \$440 million in 2025 (2012\$).

The SC-CH<sub>4</sub> and SC-CO<sub>2</sub> are the monetary values of impacts associated with marginal changes in methane and CO<sub>2</sub> emissions, respectively, in a given year. It includes a wide range of anticipated climate impacts, such as net changes in agricultural productivity, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning.

With the data available, we are not able to provide health benefit estimates

for the reduction in exposure to HAP, ozone, and PM<sub>2.5</sub> for this rule. This is not to imply that there are no such benefits of the rule; rather, it is a reflection of the difficulties in modeling the direct and indirect impacts of the reductions in emissions for this sector with the data currently available.

Based on the monetized benefits and costs, the annual net benefits of the final guidelines are estimated to be \$390 million (\$2012) in 2025, based on the average SC-CH<sub>4</sub> at a 3 percent discount rate, average SC-CO<sub>2</sub> at a 3 percent discount rate, and costs at a 7 percent discount rate.

## II. General Information

### A. Does this action apply to me?

This final rule addresses existing MSW landfills, *i.e.*, landfills accepting waste after 1987 and on which construction was commenced on or before July 17, 2014, and associated solid waste management programs. Potentially affected categories include those listed in Table 1 of this preamble.

TABLE 1—REGULATED ENTITIES

| Category                                                    | NAICS <sup>a</sup> | Examples of affected facilities                                               |
|-------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------|
| Industry: Air and water resource and solid waste management | 924110             | Solid waste landfills.                                                        |
| Industry: Refuse systems—solid waste landfills .....        | 562212             | Solid waste landfills.                                                        |
| State, local, and tribal government agencies .....          | 924110             | Administration of air and water resource and solid waste management programs. |

<sup>a</sup>North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the new subpart. To determine whether your facility would be regulated by this action, you should carefully examine the applicability criteria in final 40 CFR 60.32f of subpart Cf. If you have any questions regarding the applicability of the final subpart to a particular entity, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

### B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available through EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this action at <http://www.epa.gov/ttnatw01/landfill/landflpg.html>. Following publication in the **Federal Register**, the EPA will post

the **Federal Register** version of this final rule and technical documents at this same Web site.

## III. Background

The Emission Guidelines for MSW landfills were promulgated on March 12, 1996, and subsequently amended on June 16, 1998, February 24, 1999, and April 10, 2000, to make technical corrections and clarifications. Amendments were proposed on May 23, 2002, and September 8, 2006, to address implementation issues, but those amendments were never finalized. On July 17, 2014, the EPA issued an ANPRM for the MSW landfills Emission Guidelines (79 FR 41772). The purpose of that action was to request public input on controls and practices that could further reduce emissions from existing MSW landfills and to evaluate that input to determine if changes to the Emission Guidelines were appropriate. On July 17, 2014, the EPA issued a concurrent proposal for revised NSPS for new MSW landfills (79 FR 41796). On August 27, 2015 (80 FR 52100), the EPA proposed a review of the Emission

Guidelines to build on progress to date to (1) Achieve additional reductions in emissions of LFG and its components, (2) account for changes in the landfill industry and changes in operation of the landfills, including the size, trends in GCCS installations, and age of landfills, as reflected in new data, (3) provide new options for demonstrating compliance, and (4) to complete efforts regarding unresolved implementation issues. The EPA considered information it received in response to the ANPRM (79 FR 41772) and Notice of Proposed Rulemaking (80 FR 52100) for existing landfills in evaluating these final Emission Guidelines. We are also finalizing some of the amendments proposed on May 23, 2002, and September 8, 2006 to improve implementation of the Emission Guidelines. The respective frameworks of NSPS and Emission Guidelines have been similar since they were first promulgated in 1996 (*e.g.*, size threshold, emission threshold, monitoring requirements, etc). In response to public comments, which include implementation concerns



associated with the potential for different approaches and requirements between revised final rules, the EPA is finalizing similar requirements for the NSPS and Emission Guidelines.

#### A. Landfill Gas Emissions and Climate Change

In June 2013, President Obama issued a Climate Action Plan that directed federal agencies to focus on “assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions.”<sup>8</sup> Methane is a potent greenhouse gas (GHG) that is 28–36 times greater than carbon dioxide (CO<sub>2</sub>) and has an atmospheric life of about 12 years.<sup>9</sup> Because of methane’s potency as a GHG and its atmospheric life, reducing methane emissions is one of the best ways to achieve near-term beneficial impact in mitigating global climate change.

The “Climate Action Plan: Strategy to Reduce Methane Emissions”<sup>10</sup> (the Methane Strategy) was released in March 2014. The strategy recognized the methane reductions achieved through the EPA’s regulatory and voluntary programs to date. It also directed the EPA to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs.

The EPA recognized the climate benefits associated with reducing methane emissions from landfills nearly 25 years ago. The 1991 NSPS Background Information Document<sup>11</sup> asserted that the reduction of methane emissions from MSW landfills was one of many options available to reduce global warming. The NSPS for MSW landfills, promulgated in 1996, also recognized the climate co-benefits of

controlling methane (61 FR 9917, March 12, 1996).

A recent study assessed EPA regulations and voluntary programs over the period 1993–2013 and found that they were responsible for the reduction of about 130 million metric tons of methane emissions (equal to about 18 percent of the total U.S. methane emissions over that time period), leading to a reduction in atmospheric concentrations of methane of about 28 parts per billion in 2013<sup>12</sup> (compared to an observed increase in methane concentrations of about 80 ppb over those 20 years).

The review and final revision of the MSW landfills Emission Guidelines capitalizes on additional opportunities to achieve methane reductions while acknowledging historical agency perspectives and research on climate, a charge from the President’s Climate Action Plan, the Methane Strategy, and improvements in the science surrounding GHG emissions.

LFG is a collection of air pollutants, including methane and NMOC. LFG is typically composed of 50-percent methane, 50-percent CO<sub>2</sub>, and less than 1-percent NMOC by volume. The NMOC portion of LFG can contain various organic HAP and VOC. When the Emission Guidelines and NSPS were promulgated in 1996, NMOC was selected as a surrogate for MSW LFG emissions because NMOC contains the air pollutants that at that time were of most concern due to their adverse effects on public health and welfare. Today, methane’s effects on climate change are also considered important. In 2014, methane emissions from MSW landfills represented 18.2 percent of total U.S. methane emissions and 1.9 percent of total U.S. GHG emissions (in carbon dioxide equivalent (CO<sub>2</sub>e)).<sup>13</sup> In 2014, MSW landfills continued to be the third largest source of human-related methane emissions in the U.S., releasing an estimated 133.1 million metric tons of CO<sub>2</sub>e. For these reasons and because additional emissions reductions can be achieved at a reasonable cost, the EPA is finalizing changes to the Emission

Guidelines that are based on reducing the NMOC and methane components of LFG.

#### B. What are the public health and welfare effects of landfill gas emissions?

##### 1. Public Health Effects of VOC and Various Organic HAP

VOC emissions are precursors to both PM<sub>2.5</sub> and ozone formation. As documented in previous analyses (U.S. EPA, 2006<sup>14</sup>, 2010<sup>15</sup>, and 2014<sup>16</sup>), exposure to PM<sub>2.5</sub> and ozone is associated with significant public health effects. PM<sub>2.5</sub> is associated with health effects, including premature mortality for adults and infants, cardiovascular morbidity such as heart attacks, and respiratory morbidity such as asthma attacks, acute bronchitis, hospital admissions and emergency room visits, work loss days, restricted activity days and respiratory symptoms, as well as welfare impacts such as visibility impairment.<sup>17</sup> Ozone is associated with public health effects, including hospital and emergency department visits, school loss days and premature mortality, as well as ecological effects (e.g., injury to vegetation and climate change).<sup>18</sup> Nearly 30 organic HAP have been identified in uncontrolled LFG, including benzene, toluene, ethyl benzene, and vinyl chloride.<sup>19</sup> Benzene is a known human carcinogen.

<sup>14</sup> U.S. EPA. RIA. *National Ambient Air Quality Standards for Particulate Matter*, Chapter 5. Office of Air Quality Planning and Standards, Research Triangle Park, NC. October 2006. Available on the Internet at <http://www.epa.gov/ttn/ecas/regdata/RIAs/Chapter%205-Benefits.pdf>.

<sup>15</sup> U.S. EPA. RIA. *National Ambient Air Quality Standards for Ozone*. Office of Air Quality Planning and Standards, Research Triangle Park, NC. January 2010. Available on the Internet at [http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental\\_analysis\\_full.pdf](http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental_analysis_full.pdf).

<sup>16</sup> U.S. EPA. RIA. *National Ambient Air Quality Standards for Ozone*. Office of Air Quality Planning and Standards, Research Triangle Park, NC. December 2014. Available on the Internet at <http://www.epa.gov/ttn/ecas1/regdata/RIAs/20141125ria.pdf>.

<sup>17</sup> U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). EPA–600–R–08–139F. National Center for Environmental Assessment—RTP Division. December 2009. Available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546>.

<sup>18</sup> U.S. EPA. Air Quality Criteria for Ozone and Related Photochemical Oxidants (Final). EPA/600/R–05/004aF–CF. Washington, DC: U.S. EPA. February 2006. Available on the Internet at <http://cfpub.epa.gov/ncea/CFM/recordisplay.cfm?deid=149923>.

<sup>19</sup> U.S. EPA. 1998. Office of Air and Radiation, Office of Air Quality Planning and Standards. “Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources, Chapter 2: Solid Waste Disposal, Section 2.4: Municipal Solid Waste Landfills”. Available at: <http://www.epa.gov/ttn/chief/ap42/ch02/final/c02s04.pdf>.

<sup>8</sup> Executive Office of the President, “The President’s Climate Action Plan” June 2013. <https://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>.

<sup>9</sup> The IPCC updates GWP estimates with each new assessment report, and in the latest assessment report, AR5, the latest estimate of the methane GWP ranged from 28–36, compared to a GWP of 25 in AR4. The impacts analysis in this final rule is based on the 100-year GWP from AR4 (25) instead of AR5 to be consistent with and comparable to key Agency emission quantification programs such as the Inventory of Greenhouse Gas Emissions and Sinks (GHG Inventory), and the GHGRP.

<sup>10</sup> Executive Office of the President, “Climate Action Plan Strategy to Reduce Methane,” March 2014. [https://www.whitehouse.gov/sites/default/files/strategy\\_to\\_reduce\\_methane\\_emissions\\_2014-03-28\\_final.pdf](https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf).

<sup>11</sup> Air Emissions from Municipal Solid Waste Landfills-Background Information for Proposed Standards and Guidelines, U.S. EPA (EPA–450/3–90–011a) (NTIS PB 91–197061) page 2–15.

<sup>12</sup> Melvin, A.M.; Sarofim, M.C.; Crimmins, A.R., “Climate benefits of U.S. EPA programs and policies that reduced methane emissions 1993–2013”, *Environmental Science & Technology*, 2016, in press. <http://pubs.acs.org/doi/pdf/10.1021/acs.est.6b00367>. DOI 10.1021/acs.est.6b00367.

<sup>13</sup> Total U.S. methane emissions were 731 teragrams (Tg) CO<sub>2</sub>e and total U.S. GHG emissions were 6,870.5 Tg in 2014. A teragram is equal to 1 million Mg. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) U.S. EPA “Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014.” Table ES–2. Available at <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>.

according to the schedule in 40 CFR part 60, subpart B. The EPA will publish notice of state plan approvals or disapprovals in the **Federal Register** and will include an explanation of its decision. The EPA also intends to revise the existing federal plan (40 CFR part 62, subpart GGG) to incorporate the changes and other requirements adopted in this final action revising the Emission Guidelines. The revised federal plan will apply in states that have either never submitted a state plan or not received approval of any necessary revised state plan until such time as an initial state plan or revised state plan is approved. Fifteen states and territories implement the original Emission Guidelines promulgated at subpart Cc under the Federal Plan (40 CFR part 62, subpart GGG). The revised federal plan would also apply in Indian country unless and until replaced by a tribal implementation plan (TIP).<sup>41</sup>

Because many of the landfills currently subject to 40 CFR part 60, subparts Cc and WWW, are closed, the EPA is finalizing provisions to minimize the burden on these closed landfills while continuing to protect air quality, as discussed in sections V.C and VI.C of this preamble.

#### IV. Summary of the Final Emission Guidelines

##### A. What are the control requirements?

###### 1. Design Capacity and Emissions Thresholds

The revised Emission Guidelines retain the current design capacity thresholds of 2.5 million Mg and 2.5 million m<sup>3</sup>, but reduce the NMOC emission threshold for the installation and removal of a GCCS from 50 Mg/yr to 34 Mg/yr for landfills that are not closed as of September 27, 2017. An MSW landfill that exceeds the design capacity thresholds must install and start up a GCCS within 30 months after reporting that LFG emissions reach or exceed a NMOC level of 34 Mg/yr NMOC. The owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

<sup>41</sup> Indian tribes may, but are not required to, seek approval for treatment in a manner similar to a state for purposes of developing a tribal implementation plan implementing the Emission guidelines. If a tribe obtains such approval and submits a proposed TIP, the EPA will use the same criteria and follow the same procedure in approving that plan as it does with state plans. The federal plan will apply to all affected facilities located in Indian country unless and until EPA approves an applicable TIP.

###### 2. Tier 4

The current Emission Guidelines (40 CFR part 60, subpart Cc) provide that owners or operators determine whether the landfill has exceeded the NMOC emissions threshold using one of three available modeling procedures, known as Tiers 1, 2, and 3. The EPA is finalizing in subpart Cf an additional optional methodology based on site-specific surface methane emissions to determine when a landfill must install and operate a GCCS. This alternative emission threshold methodology, referred to as "Tier 4," is based on SEM and demonstrates that surface methane emissions are below a specific threshold. The Tier 4 SEM demonstration allows certain landfills that exceed modeled NMOC emission rates using Tier 1 or 2 to demonstrate that site-specific surface methane emissions are below a surface concentration threshold (a landfill need not model emissions under Tier 3 before using Tier 4). A landfill that can demonstrate that surface emissions are below 500 ppm for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded. Owners or operators continue to keep detailed records of each quarterly monitoring demonstration and must submit a Tier 4 surface emissions report annually. If a landfill measures a surface emissions reading of greater than 500 ppm methane, the landfill must submit a GCCS design plan and install and operate a GCCS.

Tier 4 is based on the results of quarterly site-specific methane emissions monitoring of the perimeter of the landfill and entire surface of the landfill along a pattern that traverses the landfill at 30-meter (98-ft) intervals, in addition to monitoring areas where visual observations may indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. If the landfill opts to use Tier 4 for its emission threshold determination and there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill, the owner or operator must install a GCCS, and the landfill cannot go back to using Tiers 1, 2, or 3 modeling to demonstrate that emissions are below the NMOC threshold.

Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg/yr, but less than 50 Mg/yr using Tier 1 or Tier 2. If both Tier 1 and Tier 2 indicate NMOC emissions of

50 Mg/yr or greater, Tier 4 cannot be used. In addition, a wind barrier must be used for Tier 4 when the average wind speed exceeds 4 miles per hour (mph) (or 2 meters per second), or gusts are above 10 mph. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 mph. Wind speed must be measured with an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The average wind speed must be determined at 5-minute intervals. The gust must be determined at 3-second intervals. Further, when conducting Tier 4 monitoring, the sampling probe must be held no more than 5 centimeters above the landfill (e.g., using a mechanical device such as a wheel on a pole). Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 mph.

In addition, landfills with a non-regulatory GCCS are allowed to operate the GCCS during the Tier 4 SEM demonstration, however, the GCCS must have operated at least 75 percent of the hours during the 12 months leading up to the Tier 4 SEM demonstration.

###### 3. Subcategory of Closed Landfills

Because many landfills are closed and do not produce as much LFG, the EPA is finalizing the proposed subcategory for landfills that close on or before September 27, 2017. Landfills in this subcategory will continue to be subject to an NMOC emission threshold of 50 Mg/yr for determining when controls must be installed or can be removed, consistent with the NMOC thresholds in subparts Cc and WWW of 40 CFR part 60. These closed landfills would also be exempt from initial reporting requirements (i.e., initial design capacity, initial NMOC emission rate, GCCS design plan, initial annual report, closure report, equipment removal report, and initial performance test report), provided that the landfill already met these requirements under subparts Cc or WWW of 40 CFR part 60.

###### 4. Criteria for Removing GCCS

Landfill emissions increase as waste is added to a landfill, but decline over time; as waste decays, a landfill produces less and less methane and other pollutants. In the proposed Emission Guidelines (80 FR 52112), the EPA recognized that many open landfills subject to the Emission Guidelines contain inactive areas that have experienced declining LFG flows. Therefore, the EPA is finalizing criteria for determining when it is appropriate to cap, remove, or decommission a portion of the GCCS. The criteria for capping, removing, or decommissioning

the GCCS are: (1) The landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three successive test dates. For landfills in the closed subcategory, the NMOC emission rate threshold for removing controls is 50 Mg/yr.

#### 5. Excluding Non-Productive Areas From Control

The EPA is finalizing a provision that allows the use of actual flow data when estimating NMOC emissions for the purposes of excluding low- or non-producing areas of the landfill from control. Owners or operators of landfills with physically separated, closed areas may either model NMOC emission rates, or may determine the flow rate of LFG using actual measurements, to determine NMOC emissions. Using actual flow measurements yields a more precise measurement of NMOC emissions for purposes of demonstrating the closed area represents less than 1 percent of the landfills total NMOC emissions. The Emission Guidelines historically allowed owners or operators to exclude from control areas that are non-productive. In this final action, the retained the 1 percent criteria level, rather than raising it, to prevent landfills from excluding areas from control unless emissions were very low. But, to help owners or operators demonstrate that a non-productive area may be excluded from control, the final rule allow the owner or operator to use site-specific flow measurements to determine NMOC emissions.

#### 6. Landfill Gas Treatment

The EPA is finalizing two provisions related to LFG treatment. First, the EPA is clarifying that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but also allows other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, and use as a raw material in a chemical manufacturing process. Second, the EPA is defining "treated landfill gas" as LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart Cf, and defining "treatment system" as a system that filters, de-waters, and compresses LFG for sale or beneficial use. Owners or operators must develop a site-specific treatment system monitoring plan that includes monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure

the treatment system is operating properly for each intended end use of the treated LFG. They also must keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for each end use of the treated LFG. The treatment system monitoring plan must be submitted as part of the landfill's title V permit application. The permitting authority will review the permit application, including the treatment system monitoring plan, as part of the general permitting process. The treatment system monitoring parameters would be included in the permit as applicable requirements and thus become enforceable conditions (*i.e.*, the landfill monitors the treatment system monitoring parameters and maintains them in the specified range).

#### *B. What are the monitoring, recordkeeping, and reporting requirements?*

##### 1. Wellhead Monitoring

The operational standard, corrective action, and corresponding recordkeeping and reporting remain for temperature and maintaining negative pressure at the wellhead. The EPA is removing the operational standards for nitrogen/oxygen levels at wellheads. Thus, the EPA is removing the corresponding requirement to take corrective action for exceedances of nitrogen/oxygen at wellheads. These adjustments to the wellhead monitoring parameters apply to all landfills. Although landfill owners or operators are not required to take corrective action based on exceedances of nitrogen/oxygen levels at wellheads, they are required to monitor nitrogen/oxygen levels at wellheads on a monthly basis to inform any necessary adjustments to the GCCS and must maintain records of all monthly readings. The landfill owner or operator must make these records available to the Administrator upon request.

##### 2. Surface Monitoring

The EPA is finalizing the proposed requirement to monitor all surface penetrations. Landfills must conduct SEM at all cover penetrations and openings within the area of the landfill where waste has been placed and a GCCS is required to be in place and operating according to the operational standards in 40 CFR part 60, subpart Cf. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis around the perimeter of the collection area and along a pattern that traverses the landfill

at no more than 30 meter intervals, at all cover penetrations, and where visual observations may indicate the presence of elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover. Cover penetrations include wellheads, but do not include items such as survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles.

##### 3. Corrective Action

The owner or operator must measure the LFG temperature at the wellhead and gauge pressure in the gas collection header applied to each individual well on a monthly basis. If there is an exceedance (*i.e.*, LFG temperature of 55 degrees Celsius (131 degrees Fahrenheit) or positive pressure), the owner or operator must initiate corrective action within 5 days. If the temperature exceedance or positive pressure cannot be resolved within 15 days, then the owner or operator must determine the appropriate corrective action by conducting a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after the first measurement of the temperature exceedance or positive pressure. For corrective action that takes longer than 60 days to fully implement, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule for the corrective action that does not exceed 120 days. The owner or operator must also notify the Administrator of any corrective action exceeding 60 days within 75 days and also include a description of the root cause analysis, corrective action analysis and implementation schedule in the annual report. If corrective action is expected to take longer than 120 days after the initial exceedance, the owner or operator must submit the corrective action plan and corresponding implementation timeline to the Administrator for approval within 75 days of the first measurement of positive pressure. Owners or operators must keep records of corrective action analyses. Owners or operators must include corrective action records in the annual compliance report for corrective actions that take more than 60 days to implement.

##### 4. Update and Approval of Design Plan

The EPA is reaffirming some requirements and revising others to address design plans. Design plans must continue to be prepared and approved by a professional engineer. The landfill owner or operator must then notify the Administrator that the plan is completed and provide a copy of the

plan's signature page. The Administrator will now have 90 days to make a decision about whether the plan should be submitted for review. If the Administrator chooses to review, the approval process continues as outlined in this section. However, if the Administrator indicates that submission is not required or doesn't respond within 90 days, the landfill owner or operator can continue to implement the plan with the recognition that they are proceeding at their own risk. In the event that the design plan is required to be modified to obtain approval, the owner/operator must take any steps necessary to conform any prior actions to the approved design plan and any failure to do so could result in an enforcement action.

The EPA is also finalizing two criteria for when an affected source must update its design plan and submit it to the Administrator for approval. A revised design plan must be submitted on the following timeline: (1) Within 90 days of expanding operations to an area not covered by the previously approved design plan; and (2) prior to installing or expanding the gas collection system in a manner other than the one described in the previous design plan. The final rule continues to require landfill owners or operators to prepare both an initial and revised design plan.

#### 5. Electronic Reporting

The EPA is requiring owners or operators of existing MSW Landfills to submit electronic copies of certain required performance test reports, NMOC emission rate reports, annual reports, Tier 4 emission rate reports, and wet landfilling practices through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). Owners or operators are allowed to maintain electronic copies of the records in lieu of hardcopies to satisfy federal recordkeeping requirements.

The requirement to submit performance test data electronically to the EPA applies only to those performance tests conducted using test methods that are supported by the Electronic Reporting Tool (ERT). A listing of the pollutants and test methods supported by the ERT is available at: [www3.epa.gov/ttn/chief/ert/ert\\_info.html](http://www3.epa.gov/ttn/chief/ert/ert_info.html). When the EPA adds new methods to the ERT, a notice will be sent out through the Clearinghouse for Inventories and Emissions Factors (CHIEF) Listserv ([www.epa.gov/air-emissions-inventories/emissions-inventory-listservs](http://www.epa.gov/air-emissions-inventories/emissions-inventory-listservs)) and a notice of availability will be added to the ERT Web site. You are encouraged to check

the ERT Web site regularly for up-to-date information on methods supported by the ERT.

The EPA believes that the electronic submittal of the reports addressed in this rulemaking will increase the usefulness of the data contained in those reports, is in keeping with current trends in data availability, will further assist in the protection of public health and the environment and will ultimately result in less burden on the regulated community. Electronic reporting can also eliminate paper-based, manual processes, thereby saving time and resources, simplifying data entry, eliminating redundancies, minimizing data reporting errors and providing data quickly and accurately to the affected facilities, air agencies, the EPA and the public.

The EPA Web site that stores the submitted electronic data, WebFIRE, will be easily accessible to everyone and will provide a user-friendly interface that any stakeholder could access. By making the records, data, and reports addressed in this rulemaking readily available, the EPA, the regulated community, and the public will benefit when the EPA conducts its CAA-required reviews. As a result of having reports readily accessible, our ability to carry out comprehensive reviews will be increased and achieved within a shorter period of time.

We anticipate fewer or less substantial information collection requests (ICRs) in conjunction with prospective CAA-required reviews may be needed. Under an electronic reporting system, the EPA would have air emissions and performance test data in hand; we would not have to collect these data from the regulated industry. The data would provide useful information on actual emissions, types of controls in place, locations of facilities, and other data that the EPA uses in conducting required reviews or future assessments. We expect this to result in a decrease in time spent by industry to respond to data collection requests. We also expect the ICRs to contain less extensive stack testing provisions, as we will already have stack test data electronically. Reduced testing requirements would be a cost savings to industry. The EPA should also be able to conduct these required reviews more quickly. While the regulated community may benefit from a reduced burden of ICRs, the general public benefits from the agency's ability to provide these required reviews more quickly, resulting in increased public health and environmental protection.

Air agencies could benefit from more streamlined and automated review of

the electronically submitted data. Having reports and associated data in electronic format will facilitate review through the use of software "search" options, as well as the downloading and analyzing of data in spreadsheet format. The ability to access and review air emission report information electronically will assist air agencies to more quickly and accurately determine compliance with the applicable regulations, potentially allowing a faster response to violations which could minimize harmful air emissions. This benefits both air agencies and the general public.

For a more thorough discussion of electronic reporting required by this rule, see the discussion in the proposed NSPS (79 FR 41818) and the 2015 proposed Emission Guidelines (80 FR 52127). In summary, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data will save industry, air agencies, and the EPA significant time, money, and effort while improving the quality of emission inventories and air quality regulations and enhancing the public's access to this important information.

#### 6. Landfills Recirculating Leachate or Adding Other Liquids

In the ANPRM and proposed Emission Guidelines, the EPA solicited input on whether additional action should be taken to address emissions from wet landfills. As discussed in section VI.A.3 of this preamble, there were a wide variety of perspectives provided in the public comments, and while many commenters supported separate thresholds for wet landfills, the EPA did not receive sufficient data to support a separate subcategory for landfills adding leachate or other liquids. In addition, the EPA has several other pending regulatory actions that could affect wet landfills. Accordingly, the EPA believes it is appropriate to further assess emissions from wet landfills prior to taking additional action. Therefore, the EPA is finalizing electronic reporting of additional data elements, as discussed in Section V.A.3 of this preamble, to inform potential action on wet landfills in the future.

#### C. Startup, Shutdown, and Malfunction Provisions

The standards in 40 CFR part 60, subpart Cf, apply at all times, including periods of startup or shutdown, and periods of malfunction. The EPA is reaffirming the work practice standard applicable during SSM events wherein

the landfill owner or operator is required to shut down the gas mover system and close all valves in the collection and control system potentially contributing to the venting of the gas to the atmosphere within 1 hour of the collection or control system not operating. The landfill owner or operator must also keep records and submit reports of all periods when the collection and control device is not operating.

## V. Summary of Significant Changes Since Proposal

### A. Changes to Monitoring, Recordkeeping, and Reporting

#### 1. Wellhead Monitoring

Although the EPA is finalizing the proposed removal of wellhead operational standards for nitrogen/oxygen, the EPA has decided to retain the operational standards for temperature. The temperature standards were considered to be an essential indicator for fires, as discussed in Section VI.A.1 of this preamble.

#### 2. Corrective Action

We are revising the procedural requirements for correcting positive pressure and temperature by allowing owners or operators 60 days to correct exceedances. If the owner or operator cannot achieve negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) by 60 days after the initial exceedance, owners or operators must conduct a root cause analysis to identify the most appropriate corrective action, which can include, but is not limited to, expanding the GCCS. For corrective action that takes longer than 60 days, owners or operators must develop an implementation schedule to complete the corrective action as soon as practicable, but no more than 120 days following the initial positive pressure or temperature reading. Additionally, owners or operators must keep records of the corrective action analysis. Owners or operators must submit the corrective action and corresponding implementation timeline to the Administrator for approval when implementation of the corrective action is expected to take longer than 120 days after the initial exceedance.

This change provides flexibility to owners or operators in determining the appropriate remedy, as well as the timeline for implementing the remedy.

#### 3. Landfills Recirculating Leachate or Adding Other Liquids

The EPA is adding additional electronic reporting requirements for wet areas of landfills. The additional

reporting applies to areas of the landfill that have recirculated leachate within the last 10 years and to areas where other liquids were added within the last 10 years.

The EPA is requiring these landfills to annually report quantities of liquids added and/or leachate recirculated. The first report will contain historical quantities, where those data are available in on-site records. The EPA is also requiring the landfill to report the surface area over which the liquids are added or the leachate is recirculated during each reporting year. The EPA is also requiring the landfill to report the total waste disposed in the area with recirculated leachate or added liquids as well as the annual waste acceptance rates in those same areas. As discussed in Section VI.A.3 of this preamble, this additional electronic reporting for wet landfills will inform potential future action on wet landfills.

#### 4. Portable Gas Analyzers

We are allowing the use of portable gas composition analyzers in conjunction with Method 3A to monitor the oxygen level at a wellhead. A portable analyzer may be used to monitor the oxygen level at a wellhead provided that it is calibrated and meets all QA/QC requirements according to Method 3A. ASTM D6522-11 may be used as an alternative to Method 3A for wellhead monitoring as long as all the quality assurance is conducted as required by ASTM D6522-11. To use ASTM D6522-11, the sample location must be prior to combustion.

This change allows owners or operators to employ devices that are commonly used in practice to measure wellhead parameters. This change also eliminates the need for the landfill owner or operator to request portable analyzers as an alternative, as well as the need for agency review or approval of such requests. In addition to providing reliable results when used properly, portable analyzers have a number of benefits, including common use, the ability to provide additional information on gas composition, and the ability to download data to a spreadsheet for easy access and analysis.

#### 5. More Precise Location Data

The EPA is finalizing a requirement for landfills to report the latitude and longitude coordinates of each surface emissions exceedance (500 ppm methane or greater), as proposed, except the instrument accuracy must be at least 4 meters instead of 3 meters. This change will provide a more robust and long-term record of GCCS performance.

Landfill owners or operators and regulators can use locational data to gain perspective on how the LFG collection system is functioning over time and owners or operators will be able to track trends in GCCS performance and cover practices to ensure a well operating system and minimize emissions.

### B. Tier 4

The EPA is finalizing the use of Tier 4 SEM as an alternative way of determining when a landfill must install a GCCS; however, in the final rule, the final Tier 4 emissions threshold determination can be used only at landfills that have modeled NMOC emissions using Tier 1 or Tier 2 of greater than or equal to 34 Mg/yr but less than 50 Mg/yr because the landfills NESHAP (40 CFR part 63, subpart AAAAA) requires landfills that have modeled NMOC emissions of 50 Mg/yr or greater to install and operate a GCCS irrespective of surface emissions. If both Tier 1 and Tier 2 indicate NMOC emissions of 50 Mg/yr or greater, Tier 4 cannot be used (a landfill need not model emissions under Tier 3 before using Tier 4). In order to verify that the landfill is eligible for Tier 4, the EPA is finalizing a provision to require landfill owners or operators that choose to use Tier 4 to continue to conduct Tier 1 and Tier 2 NMOC emission rate calculations and report results in the annual report.

The EPA is also limiting the use of Tier 4 at landfills with a GCCS installed. In order for a landfill with an operational GCCS to qualify for Tier 4, the GCCS must have operated for at least 75 percent of the 12 months prior to initiating Tier 4 testing. The EPA is finalizing reporting and recordkeeping requirements for the annual operating hours of destruction devices in order to verify that a landfill with a GCCS installed and opting for Tier 4 meets the GCCS criteria for having operated the system.

In addition, the EPA is finalizing specific requirements for the use of Tier 4 for emission threshold determinations related to wind speed. Since accurate measurements can be compromised in even moderately windy conditions, the EPA is requiring the owner or operator to use a wind barrier, similar to a funnel or other device, to minimize surface air turbulence when onsite wind speed exceeds the limits in the rule. Thus, when a wind barrier is used, the final rule allows the Tier 4 surface emissions demonstration to proceed when the average on-site wind speed exceeds 4 mph, or gusts exceed 10 mph. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25

mph. Although we are aware of the use of wind barriers in the field, the EPA intends to provide additional guidance on their use. In addition, the owner or operator must take digital photographs of the instrument setup, including the wind barrier. The photographs must be time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration. The owner or operator must maintain those photographs per the recordkeeping requirements. Wind speed must be measured with an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The average wind speed must be determined at 5-minute intervals. The gust must be determined at 3-second intervals. Further, when taking surface measurements, the sampling probe must be held no more than 5 centimeters above the landfill surface (e.g., using a mechanical device such as a wheel on a pole).

The EPA is also finalizing reporting and recordkeeping requirements to ensure that a GCCS is installed in a timely manner and to improve the transparency of SEM testing. To ensure that a GCCS is installed in a timely manner, the EPA is requiring a GCCS to be installed and operated within 30 months of the most recent NMOC emission rate report in which the calculated NMOC emission rate equals or exceeds 34 Mg/yr according to Tier 2, once there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill. To improve the transparency of SEM testing, landfill owners or operators must notify the delegated authority 30 days prior to conducting Tier 4 tests and maintain records of all SEM monitoring data and calibrations. In addition, landfill owners or operators must take and store digital photographs of the instrument setup. The photographs must be time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration.

#### *C. Changes To Address Closed or Non-Productive Areas*

##### **1. Closed Landfill Subcategory**

The closed landfill subcategory is expanded to include those landfills that close on or before September 27, 2017 which is 13 months after publication of the final Emission Guidelines. This change gives landfills that closed or are

planning to close time to complete the steps to reach closure.

##### **2. Criteria for Removing or Decommissioning GCCS**

The GCCS can be capped or removed when a landfill owner or operator demonstrates that (1) the landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three consecutive test dates (50 Mg/yr for the closed landfill subcategory). The final rule does not contain a GCCS removal criterion based on SEM.

#### *D. Startup, Shutdown, and Malfunction Provisions*

In the 2015 Emission Guidelines proposal (80 FR 52103), the EPA clarified that standards apply at all times, including periods of SSM. The EPA also added requirements to estimate emissions during SSM events. Consistent with *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), the EPA is clarifying that the standards in the Emission Guidelines, once implemented through an EPA-approved state plan or a promulgated federal plan, apply at all times. In recognition of the unique nature of landfill emissions, and consistent with the need for standards to apply at all times, including during periods of SSM, the EPA is reaffirming a work practice standard that applies during SSM events. During such events, owners or operators must shut down the gas mover system and close within 1 hour all valves in the collection and control system contributing to the potential venting of the gas to the atmosphere. The landfill owner or operator must also keep records and submit reports of all periods when the collection and control device is not operating.

#### *E. Other Corrections and Clarifications*

The use of EPA Method 25A and Method 18 (on a limited basis, e.g., specific compounds like methane) are included in the final rule. Method 25A in conjunction with Method 18 (for methane) or Method 3C can be used to determine NMOC for the outlet concentrations less than 50 ppm NMOC as carbon.

#### **VI. Rationale for Significant Changes Since Proposal**

After considering public comments and further analyzing the available data, the EPA made several changes in this final rule relative to what we proposed.

A complete list of public comments received on the proposed rule and the responses to them can be viewed in the document "Responses to Public Comments on EPA's Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills: Proposed Rules" (hereafter "Response to Comments document"), which is available in Docket EPA-HQ-OAR-2014-0451. This section of the preamble summarizes comments and presents responses to those comments for only those provisions that have changed since the 2015 proposed Emission Guidelines.

#### *A. Changes to Monitoring, Recordkeeping, and Reporting*

##### **1. Wellhead Monitoring**

In the 2014 proposed NSPS, the EPA requested comment on alternative wellhead monitoring requirements, including potential exclusion from the temperature and nitrogen/oxygen monitoring requirements, or a reduction in the frequency of this monitoring. For example, the EPA indicated that it could reduce the frequency of wellhead monitoring for these three parameters (temperature and nitrogen/oxygen) from monthly to a quarterly or semi-annual schedule. The EPA requested comments on whether the potential exclusion should apply to a subset of landfills or landfill areas based on beneficial use of LFG.

In the 2015 proposed Emission Guidelines, the EPA proposed to remove the operational standards (*i.e.*, the requirement to meet operating limits) for temperature and nitrogen/oxygen at the wellheads, thus removing the corresponding requirement to take corrective action for exceedances of these parameters. This approach was taken to eliminate the need for owners or operators to request higher operating values (HOVs) for these parameters, submit alternative timelines for corrective action, or expand the GCCS to address exceeding these wellhead standards. The EPA proposed to maintain the requirement to monitor nitrogen/oxygen and temperature on a monthly basis, but to remove the requirement to report exceedances from fluctuations or variations in these parameters in the annual reports. Instead of annual reporting, the EPA proposed that landfill owners or operators maintain the records of this monthly monitoring on site to inform any necessary adjustments to the GCCS and make these records available to the Administrator upon request. The EPA proposed to maintain the requirement to



operate the GCCS at negative pressure and in a manner that collects the most LFG and minimizes losses of LFG through the surface of the landfill. The EPA also requested comments on whether it should add a requirement to monitor wellhead flow rate, or any other wellhead monitoring parameters, that would help to ensure a well-operated GCCS (80 FR 52138).

*Comment:* Several commenters want the EPA to maintain the wellhead operational standards, including states, industry consultants, and environmental organizations, with one environmental organization stating that these wellhead parameters are the only warning signal for potential fire hazards. One state stated that the removal of the operational standards could lead to some landfill owners or operators not operating the GCCS in an effective manner, thus creating a potential for increased LFG emissions through the landfill surface.

Many other commenters supported removing the nitrogen/oxygen and temperature operational standards, including industry, some states, and the Small Business Association. Several commenters indicated that a lack of response to or approval of HOV requests or alternative timelines for corrective action, despite appropriate justification, is a significant administrative barrier in the current Emission Guidelines. These commenters stated that a lack of response to or approval of HOVs results in owners or operators having to install new wells to correct for temperature or oxygen exceedances even though such expansion of the GCCS does not correct the exceedance and may be contrary to a well-operated GCCS. One commenter stated that removing the operational standards would alleviate one of the most significant barriers to installing interim gas collection measures and would alleviate the corresponding administrative burden of requesting HOVs. Other commenters stated that removing the operational standards would not only reduce administrative burden, but would also facilitate early installation of GCCS and the use of appropriate best management practices to maximize gas collection. Two commenters from state agencies agreed with removing the operational standards, and agreed with retaining monthly monitoring of temperature and nitrogen/oxygen and retaining the corresponding monitoring data.

Several commenters suggested that certain monitoring data should be reported on a semi-annual basis so that agencies can identify or prevent fires. For example, state agency commenters suggested that the EPA require semi-

annual reporting of wellhead readings above 5 percent oxygen and 130 degrees Fahrenheit, which was supported by supplemental comments received from the industry and industry trade organizations. One commenter also suggested reporting of any subsurface fire. One regional agency wanted the results to be reported if temperature exceeds 150 °F and also suggested reporting any methane to carbon dioxide ratio less than 1.

Commenters that supported removal of the operational standards for temperature and nitrogen/oxygen also contended that the nitrogen/oxygen and temperature wellheads parameters are poor indicators of landfill fires or inhibited decomposition and that landfill owners or operators already have their own incentive to prevent landfill fires. Commenters added that expanding the LFG collection system by drilling new wells may introduce more air into the landfill, which can exacerbate a fire and actually increase oxygen content. Commenters (0451–0178, 0451–0167, 0215–0191, 0215–0121) that favored retaining the operational standards for temperature and nitrogen/oxygen contend that temperature and nitrogen/oxygen data are essential to inform regulators of the presence of the potential for a landfill fire.

*Response:* After carefully considering public comments and available data, the EPA is removing the operational standards (*i.e.*, the requirement to meet operating limits) for nitrogen/oxygen, but not temperature. Landfill owners or operators must continue to monitor nitrogen/oxygen on a monthly basis, however, to ensure that the GCCS is well maintained and operated, collects the most LFG, and minimizes losses of LFG through the surface of the landfill. Landfill owners or operators must maintain records of this monthly monitoring and make these records available to the Administrator upon request. The EPA is requiring monthly monitoring and recordkeeping for these wellhead monitoring parameters (*i.e.*, oxygen, nitrogen, temperature, and pressure), since these are key indicators that are already being monitored by landfill owner or operators to determine how well the landfill is being operated, including the capturing and destroying landfill gas, promoting efficient anaerobic decomposition and/or preventing landfill fires.

Because of concerns regarding fire hazards, the EPA is retaining the operational standard for temperature. Landfill owners or operators must electronically submit, as part of their annual report, all readings that show

LFG temperatures greater than 55 degrees Celsius (131 degrees Fahrenheit), and document the root cause and corrective action taken to correct for this exceedance, as discussed in section VI.A.2 of this preamble. While several commenters supported removing the temperature parameter, other commenters were concerned with fire risks if the parameter was removed. In addition, given the EPA experience with consent decrees and other enforcement actions involving elevated temperature values, the EPA has decided to retain temperature as an operating standard in the final rule. This overall approach will reduce the number of requests for higher operating values and alternative timeliness for nitrogen/oxygen parameters. In addition, note that regulatory agencies can request data records of oxygen, nitrogen, or temperature monitoring, as measured on a monthly basis, at any time.

Landfills are subject to 40 CFR part 60, subpart A. These provisions require landfill owners or operators, to the extent practicable, to maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Due to the extreme environmental consequences of a subsurface landfill fire, these provisions obligate landfill owners or operators to take all practical steps necessary to avoid landfill fires. While this action removes requirements to meet operational standards for nitrogen/oxygen at wellheads and to make corrective actions, landfill owners or operators must continue all due diligence to ensure that the GCCS is not overdrawn, thereby creating a flammable subsurface environment.

Because the corrective action requirements for certain parameters have been retained, the EPA is reaffirming its provisions for HOVs. The HOV provisions were originally enacted to address variations in temperature between landfills and between wells. With a sufficient demonstration (*i.e.*, supporting data showing the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens), an HOV may be established for temperature, nitrogen, or oxygen at a particular well. The EPA encourages regulatory authorities review requests for HOVs in a timely manner and to make use of these mechanisms where

appropriate.<sup>42</sup> States may also consider HOVs when developing state plans.

## 2. Corrective Action

In a 1998 **Federal Register** notice (63 FR 32748, June 16, 1998), the EPA amended the wellhead monitoring provisions of 40 CFR part 60, subpart WWW, to allow an alternative timeline for correcting wellhead exceedances to be submitted to the Administrator for approval. The rule change made the wellhead monitoring provisions consistent with the SEM provisions, which allow an alternative remedy and corresponding timeline for correcting an exceedance to be submitted to the Administrator for approval. The EPA noted in the 1998 preamble that any timeline extending more than 120 days must be approved by the regulating agency. Since 1998, questions have been raised about the timing of correcting wellhead exceedances and whether a landfill needs agency approval for corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for expanding the GCCS.

In the 2015 Emission Guidelines proposal, the EPA clarified its intent and outlined a corresponding timeline for correcting positive pressure at a wellhead. The EPA proposed that a landfill must submit an alternative corrective action timeline request to the Administrator for approval if the landfill cannot restore negative pressure within 15 calendar days of the initial failure to maintain negative pressure and the landfill is unable to (or does not plan to) expand the gas collection system within 120 days of the initial exceedance. The EPA explained in the preamble that it did not specify a schedule in the proposed rule language by when a landfill would need to submit alternative timeline requests because the EPA determined that investigating and determining the appropriate corrective action, as well as the schedule for implementing corrective action, would be site specific and depend on the reason for the exceedance (80 FR 52126). In addition, the EPA requested comment (80 FR 52126) on an alternative timeline that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days from when an exceedance is identified. In the 2014 ANPRM, the EPA had requested

comment on the same approach, as well as whether 60 days is the appropriate time to make necessary repairs.

*Comment:* The EPA received comments on the proposed changes, including the time allowed for corrective action and for submitting alternative timeline requests for approval by the Administrator. Regarding the timeframe for submitting a request, several state agencies recommended extending the 15-day timeline for a request to be submitted and indicated that 15 days is not sufficient time to evaluate the problem and plan for corrective action, which may often involve construction activities. There were varied opinions from the state agencies on what length of time beyond 15 days is appropriate. Two agencies supported an extension to as soon as practicable but no later than 60 days, other agencies specified that the request should be submitted within 30 days from the initial exceedance.

Industry representatives from private and publicly owned landfills as well as waste industry consultants opposed the requirement to submit a request for an alternative corrective action timeline within 15 days. The commenters were concerned that 15 days is not enough time to assess the appropriate solution across miles of interconnected piping. In addition, the commenters were concerned that a 15-day time period would increase the paperwork for both the landfill and the reviewing regulatory agency. One commenter indicated that while many repairs can be completed within 60 days, some repairs, especially in cold weather climates, may take longer. One industry commenter suggested that a timeframe of 90 days to complete any adjustments or repairs is appropriate. If the corrections could not be made within 90 days, the commenter stated that the landfill would be prepared to have the system expanded within 120 days.

Industry commenters raised the issue that the timeline for corrective action for surface exceedances in the current subpart WWW regulations, 40 CFR 60.755(c)(4)(v), allows 120 days to install a new well or other collection device or submit an alternative timeline for another corrective action. These commenters also indicated that the 1998 NSPS amendments modified the corrective action for wellhead parameter exceedances to be consistent with the timeframe allowed for correcting surface exceedances (63 FR 32748, June 16, 1998). The commenters also noted that the 1998 amendments recognized that installation of a new well may not always be the appropriate corrective

action for remedying a wellhead exceedance.

Despite the 1998 rule amendments, several of these industry commenters note that interpretation and implementation of the 1998 amendments to 40 CFR 60.755(a)(3) have been inconsistent, with some agencies only requiring the landfill owner or operator to submit requests if the corrective action will take longer than 120 days. Other states have taken the position that any exceedances that cannot be resolved within 15 days must automatically result in a requirement to expand the GCCS. One commenter referenced determinations that required landfills to submit an alternative timeline request within 15 days. One commenter indicated that the original rule never anticipated notification and a request for an alternative compliance timeline within 15 days, while another commenter indicated that the state of Texas requires landfills to submit alternative timelines only if the corrective action requires more than 120 days to complete.

In consideration of the 1998 final rule notice, industry commenters recommended that EPA require landfill owners or operators to submit an alternative timeline request for approval as soon as practicable and only in circumstances in which a system expansion or alternative corrective action will require more than 120 days to complete. One of the commenters (Republic 0451-0176) suggested that this approach was consistent with the Petroleum Refineries NSPS (40 CFR part 60, subpart Ja). The commenter noted that while the Landfills NSPS requires special approval to avoid the default corrective action of expanding the GCCS, the Refineries NSPS requires a root cause analysis to identify the appropriate corrective action, without specifying a default approach. The Refineries NSPS requires a root cause analysis and a corrective action analysis for exceedances and requires the facility to implement the corrective action within 45 days. If the corrective action cannot be completed in 45 days, the refinery must document and record all corrective actions completed to date. For actions not fully completed by day 45, they must develop an implementation schedule, as soon as practicable, for beginning and completing all corrective action.

One commenter provided some ideas for landfills to demonstrate good faith effort to comply with the 120-day corrective action schedule. They suggested the rules clarify that the landfill owner or operator is required to submit a notification to the agency that

<sup>42</sup> The EPA asserts the importance of case specific HOV requests and approvals. However, to address concerns from HOV request reviewers and those submitting requests, an example of regulatory guidance for HOV demonstrations can be found at [http://www.epa.ohio.gov/portals/34/document/guidance/gd\\_1002.pdf](http://www.epa.ohio.gov/portals/34/document/guidance/gd_1002.pdf).



identifies and describes the diagnosis performed, the results of the diagnosis, identifies the corrective measure or alternative remedy to be implemented and reason(s) why system expansion is not appropriate to correct the exceedance. Under such an approach, corrective measures other than expansion that take 0–60 days to complete from the initial exceedance would not require any notification or approval but they would be documented in the annual compliance report. For corrective actions other than expansion that take longer than 60 days but less than 120 days to complete, the landfill owner or operator would notify the regulatory agency by day 75 from the date of the initial exceedance. This would allow 45 days for the agency to review and comment, and such notification would not require agency approval so as not to delay the site from proceeding with and completing the corrective action, as long as the corrective actions are completed within the 120-day timeframe.

Industry commenters indicated that the timeline for corrective action is affected by other regulations. Two of these commenters noted that any corrective action that involves disturbing the final landfill cover could delay diagnosing the problem. All of these commenters also noted that a 60-day timeframe is problematic for landfills affected by the Asbestos NESHAP (40 CFR part 61, subpart M), which requires a 45-day notification prior to disturbing areas that may have asbestos containing material.

*Response:* The EPA is retaining the corrective action requirements for temperature in addition to negative pressure. The EPA recognizes the importance of temperature as a critical indicator of landfill fires and its effect on methanogens. Further removal of the corrective action requirements for temperature could have the unintended consequence of improper operation of a GCCS which could lead to a subsurface fire. Due to the importance of this parameter, e-reporting requirements for excessive temperature have also been established to better assess landfill fires.<sup>43</sup>

After carefully considering the comments received and evaluating the available data, the EPA is finalizing corrective action requirements that generally give owners or operators 60

days to investigate and determine the appropriate corrective action and then implement that action. The EPA has retained the requirements for temperature and positive pressure, in that if positive pressure or temperature exceedances exist, action must be initiated to correct the exceedances within 5 calendar days. This requirement has been retained to ensure the landfill takes prompt action to ensure the GCCS remains well-operated. The EPA recognizes, however, that the appropriate corrective action, as well as a schedule to implement it, is site-specific and depends on the reason for the exceedance. Therefore, for corrective action that takes longer than 60 days after the initial exceedance to implement, the EPA is providing flexibility for the landfill to determine the appropriate course of action based on a root cause analysis. Specifically, if the owner or operator cannot achieve negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) at the GCCS wellhead within 15 days, then the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) was first measured. An implementation schedule is required for exceedances that will take longer than 60 days to correct. A root cause analysis is an assessment conducted through a process of investigation to determine the primary cause, and any other contributing cause(s), of positive pressure at a wellhead or temperature above 55 degrees Celsius (131 degrees Fahrenheit). The root cause analysis and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be kept on site as a record, but they do not have to be submitted or approved.

If negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 60 days, then the owner or operator must develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure or temperature reading. The owner or operator must also notify the Administrator within 75 days. The implementation schedule, root cause analysis, and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be submitted in the facility's next

annual report, but these items do not have to be approved.

If the exceedance cannot be corrected (or is not expected to be corrected) within 120 days, then the owner or operator must submit the root cause analysis, plan for corrective action to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit), and the corresponding implementation timeline to the Administrator. The Administrator must approve the plan for corrective action and the corresponding timeline. The owner or operator must submit the proposed corrective action and timeline to the Administrator for approval as soon as practicable but no later than 75 days after the initial exceedance. Requiring approval by the Administrator for corrective action timelines that extend beyond 120 days is consistent with the corrective action timeline for surface emissions in 40 CFR 60.36f(c)(4)(v). This approach also prevents the landfill owner or operator from delaying submittals for corrective action requests until day 120. Once the negative pressure has been restored, the facility must document the corrective actions taken in the facility's next annual report.

For corrective action required to address positive pressure or temperature, the owner or operator must keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s); the date for corrective action(s) already completed following the positive pressure reading and; and for action(s) not already completed within 60 days of the initial positive pressure reading, a schedule for implementation, including proposed commencement and completion dates. For corrective actions taking longer than 60 days to correct the exceedance, the owner or operator would also include in the annual report the root cause analysis, recommended corrective action(s), date corrective actions were completed, and schedule for implementing corrective actions. The owner or operator must also notify the Administrator within 75 days. For corrective actions taking longer than 120 days to correct the exceedance, the owner or operator would include, in a separate notification submitted to the Administrator for approval as soon as practicable, but no later than 75 days after the initial positive pressure or elevated temperature reading, the root cause analysis, recommended corrective action(s), date corrective actions taken to date were completed, and proposed schedule for implementing corrective actions.

<sup>43</sup> The need to rely on temperature in addition to pressure is also illustrated in the report titled Subsurface Heating Events at Solid Waste and Construction and Demolition Debris Landfills: Best Management Practices at [http://www.epa.state.oh.us/Portals/34/document/guidance/gd\\_1009.pdf](http://www.epa.state.oh.us/Portals/34/document/guidance/gd_1009.pdf).

### 3. Landfills Recirculating Leachate or Adding Other Liquids

In the ANPRM and proposed Emission Guidelines, the EPA solicited input on whether additional action should be taken to address emissions from wet landfills (*i.e.*, landfills that recirculate leachate or add liquids). Commenters differed on whether the EPA should require separate thresholds or different lag times for landfills that recirculate leachate or add liquids. (The lag time is the time period between when the landfill exceeds the emission rate threshold and when controls are required to be installed and started up.)

*Comments:* Commenters supported more environmentally protective requirements for wet landfills and asserted that wet landfills produce more methane but actually collect less. Commenters said that the EPA should shorten the lag time for installing controls for these landfills. Other commenters opposed separate requirements for wet landfills and contended that additional requirements for wet landfills would achieve minimal emission reductions and would result in a significant additional burden for landfills that recirculate leachate. One commenter said that the EPA should focus on potential emission reductions at landfills that recirculate leachate.

Commenters also differed on what methane generation rate (*k*-value) should be used in the landfill Emission Guidelines for wet landfills. One commenter indicated that they have previously provided several studies on *k*-values for wet landfills to EPA and urged the EPA to update the emission factors for wet landfills based on this literature prior to adjusting the control requirements at landfills recirculating leachate or adding other liquids. Another commenter asked the EPA to use higher, more representative *k*-values, or perhaps a sensitivity analysis for a range of *k*-values to estimate the impacts of controlling emissions from wet landfills in the landfills Emission Guidelines.

*Response:* Based on the diverse nature of the feedback provided and several other outstanding EPA actions affecting the control requirements and emission factors for wet landfills, the EPA is not creating separate emission threshold or lag time requirements for wet landfills in this action. Instead, the EPA believes it is appropriate to further assess emissions from wet landfills prior to taking additional action on control requirements or changes to the *k*-values. As a result, the EPA is finalizing additional electronic reporting requirements for wet landfills with a

design capacity of 2.5 million Mg or greater to inform potential future action on wet landfills. The final rule is limiting reporting of these additional data to wet landfills that meet the current size threshold of 2.5 million Mg of design capacity to be consistent with the universe of landfills that are affected by the rule.

Specifically, the final Emission Guidelines require annual electronic reporting of the volume of leachate recirculated (gallons per year) and the volume of other liquids added (gallons per year), as well as the surface area over which the leachate is recirculated (or sprayed), and the surface area (acres) over which any liquids are applied. The quantity of leachate recirculated or liquids added should be based on company records or engineering estimates. The initial report will collect historical data for the 10 years preceding the initial annual reporting year, to the extent the data are available in on-site records, along with data corresponding to the initial reporting year. After the initial report, the other annual electronic reports will include only the quantities of leachate recirculated and/or added liquid and their corresponding surface areas for each the subsequent reporting year. The EPA believes many landfills, especially those operating with a Research, Development, and Demonstration (RD&D) permit, already keep records and may submit reports containing quantities of liquids added. So, the effort to track these additional data is expected to be minimal. RD&D permits are issued through Resource Conservation and Recovery Act (RCRA) subtitle D, part 258 regulations for MSW landfills. The EPA is also aware of some state rules that require reporting of leachate or added liquids outside of the Clean Air Act reporting requirements. Consolidating these data in an electronic format in a central repository can help inform how leachate or added liquids affect LFG generation and collection whether air emission standards should be adjusted for wet landfills.

The EPA is also requiring the landfill to report the total waste disposed (Mg) in the area with recirculated leachate and/or added liquids, as well as the annual waste acceptance rates (Mg/yr) in those same areas. Recognizing that the waste quantities may be tracked at the scale house entry to the landfill and not the specific cell where the liquids are added, the EPA is allowing the landfill to report data based on on-site records or engineering estimates.

The EPA is exempting landfills in the closed landfill subcategory from this

wet landfill report recognizing that this information would be difficult to obtain from this subcategory of landfills, these landfills are unlikely to still be adding liquids if closed, and also because the gas generation from these landfills is on the downward side of their gas generation curve. In addition, for similar reasons the EPA is allowing owners or operators of landfills to discontinue annual reporting of the wet landfill report after the landfill has submitted its closure report.

The EPA is also aware of annual LFG collected and annual LFG generation data electronically reported to 40 CFR part 98, subpart HH, of the GHGRP and therefore the EPA is not requesting reporting of these data in this rule to avoid duplicative requests. However, the EPA may link the wet landfill practices data collected under the landfills NSPS with the annual gas collected data under subpart HH in order to inform how liquids addition affects LFG emissions. Similarly, the EPA understands that precipitation may affect gas generation. However, since precipitation data are readily available through the National Weather Service, the EPA is not requiring reporting of this parameter. Instead, the EPA will use existing electronic data already available to link up with data collected under this final rule. These additional data will be used to assess the appropriateness of potential future action on wet areas of landfills.

The Paperwork Reduction Act (PRA) requires each federal agency to obtain OMB approval before undertaking a collection of information directed to 10 or more people. The PRA applies whether a "collection of information is mandatory, voluntary, or required to obtain or retain a benefit." The EPA believes the additional data on wet landfills will be beneficial for evaluating whether separate thresholds for wet landfills are appropriate when revising future MSW landfill standards. Because the EPA understands that many of the data elements in the wet landfill report, including quantities of leachate or other liquids added and the surface areas over which those liquids are added are tracked at a state level as part of a leachate management or RLD permit, the EPA does not anticipate these data. Additionally, the EPA is allowing landfill owners or operators to report the data elements in the wet landfill monitoring report using either engineering estimates or on-site records to minimize the burden on respondents, depending on the types of records the landfill owner/operator may keep.

This is a new rule and a new collections submitted to OMB under

EPA ICR number 2522.02. This collection is similar to collections for subpart Cc. Thus, many of the line item burden estimates in this ICR estimate are the same as the burdens submitted to OMB under ICR number 1893.06 for the most recent ICR renewal for subpart Cc.

#### 4. Portable Gas Analyzers

Commenters on the proposed NSPS (79 FR 41796) requested that the EPA specify that portable gas composition analyzers are an acceptable alternative to Methods 3A or 3C, and noted that these devices are commonly used in practice to measure wellhead parameters and are calibrated according to the manufacturer's specifications. Currently, approvals of these analyzers are done on a case-by-case basis. Therefore, in the preamble for the proposed revisions of the Emission Guidelines (80 FR 52141), the EPA requested data or information on using a portable gas composition analyzer according to Method 3A for wellhead monitoring. The EPA also requested data on other reference methods used for calibrating these analyzers.

*Comment:* Many commenters supported the use of portable gas composition analyzers and requested that the EPA specify that these analyzers may be used as an approved alternative monitoring method for well monitoring. Three state agencies indicated the use of the portable analyzers is common practice. One of these agencies stated that Method 3A and Method 3C are designed to be used in "quasi-CEMS" and/or "laboratory benchtop" situations and most landfill operators are not using this type of equipment to test wellhead LFG; instead, landfill operators are using handheld-size portable analyzers. Another state agency stated that portable gas composition analyzers (e.g., Landtec GEM 2000) are a standard for conducting MSW landfill well monitoring and the analyzers provide additional information on gas composition than what the current Emission Guidelines require, which provides operators with a better understanding of the condition of the landfill. This commenter said that a primary advantage of portable gas composition analyzers, for both landfills and regulators, is that these devices take and record the monitored readings (as well as other information on gas composition that is not required to be monitored in the Emission Guidelines), which can then be downloaded into a spreadsheet and prevent landfills from making data collection mistakes. The commenter suggested that the EPA and state air pollution control agencies

would benefit if the EPA were to require landfills to submit, in their semi-annual reports, all of the monitoring data recorded by portable gas composition analyzers.

One commenter stated that most portable gas composition analyzers can be used to measure the oxygen level at the wellhead and can be calibrated according to Method 3A, but are unlikely to be calibrated according to Method 3C (to measure oxygen or nitrogen levels) because such calibration requires the use of gas chromatograph equipment with a thermal conductivity detector and integrator. The commenter said that Method 3A is straightforward and does not specify a particular technology. Several commenters specifically referenced the comments from an equipment manufacturer that provided specific details on how its Landtec GEM Series portable analyzers are able to comply with each specific requirement in Method 3A, including the calibration requirements. Two of these commenters said that portable gas composition analyzers should be allowed in both the Emissions Guidelines and NSPS. Another of these commenters requested that the EPA add language to the rule to recognize that balance gas is commonly used as a surrogate for nitrogen.

With regard to the EPA's request for data on other reference methods used for calibrating portable gas composition analyzers, one commenter suggested that the EPA allow ASTM D6522 as an alternative to Method 3A because an analyzer can easily be calibrated for oxygen alone following ASTM D6522. The commenter stated that although the QA/QC procedures in ASTM D6522 are different from Method 3A, they are just as rigorous as Method 3A. The commenter stated that it has extensive data available showing portable gas composition analyzers are routinely calibrated according to ASTM Method D6522 for measuring NOx, CO, and oxygen during engine testing. This commenter also stated that any analyzer or device must be calibrated according to an EPA approved method and not just manufacturer's specifications.

*Response:* The EPA appreciates the commenters providing information regarding the use of portable gas composition analyzers for landfill monitoring. Commenters provided data showing that their portable gas composition analyzers are used to monitor the oxygen level at a wellhead and are capable of meeting the calibration requirements in Method 3A. Therefore, in this action, we are clarifying the use of portable gas composition analyzers with Method 3A.

A portable gas composition analyzer may be used to monitor the oxygen level at a wellhead provided that the analyzer is calibrated and meets all QA/QC according to Method 3A. Although we did not receive enough information regarding calibration methods that could be used on a portable gas composition analyzer to monitor the nitrogen level at a wellhead, any portable combustion monitor analyzer that uses gas chromatography and thermal conductivity technology may be used with Method 3C. Other technologies for the measurement of nitrogen may be used in lieu of Method 3C through the administrative alternative test method process outlined in 40 CFR 60.8(b)(2).

Regarding the suggestion to allow ASTM D6522-11 as an alternative to Method 3A, the EPA thanks the commenter for their perspective. As long as all the quality assurance is conducted as required by ASTM D6522-11, then ASTM D6522-11 may be used as an alternative to Method 3A for wellhead monitoring (prior to combustion). Examples of quality assurance required by ASTM D6522-11 include, but are not limited to: analyzers must have a linearity check, interference check, bias check using mid-level gases, stability check, and be calibrated before a test; and a calibration error check and the interference verification must be conducted after the testing has occurred. Due to a different sample matrix typically found in post-combustion gas streams as stated in the applicability of ASTM D6522-11, the interference check must be done on the oxygen measurement with the appropriate gases (e.g., carbon dioxide, VOC mixture, and methane) and concentration ranges. The ASTM D6522-11 method also has calibrations before and calibration checks after testing. According to Methods 3A, 3C, and ASTM D6522-11, the data are valid only when they pass the bias check or zero and upscale calibration error check. The EPA does not believe manufacturers' specifications are rigorous enough to ensure data are of a proper quality.

#### 5. More Precise Location Data

The EPA proposed more specific requirements for reporting the locations where measured methane surface emissions are 500 ppm above background (80 FR 52124). Specifically, the EPA proposed to require landfills to report the latitude and longitude coordinates of each SEM exceedance using an instrument with an accuracy of at least 3 meters. This includes surface methane readings above 500 ppm for landfills conducting quarterly SEM with

## Attachment C

U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills;  
**Final Rule, 81 Fed. Reg. 59,332 (Aug. 29, 2016)** (excerpts)

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2003-0215; FRL-9949-51-OAR]

RIN 2060-AM08

**Standards of Performance for Municipal Solid Waste Landfills**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is finalizing a new subpart that updates the Standards of Performance for Municipal Solid Waste Landfills. Under section 111 of the Clean Air Act, the EPA must review, and, if appropriate, revise standards of performance at least every 8 years. The EPA's review of the standards for municipal solid waste landfills considered landfills that commence construction, reconstruction, or modification after July 17, 2014. The final standards also reflect changes to the population of landfills and an analysis of the timing and methods for reducing emissions. This action will achieve additional reductions in emissions of landfill gas and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This action also incorporates new data and information received in response to the proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system.

The new subpart will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. Landfills are a significant source of methane, which is a potent greenhouse gas pollutant. These avoided emissions will improve air quality and reduce the potential for public health and welfare effects associated with exposure to landfill gas emissions.

**DATES:** This final rule is effective on October 28, 2016.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 28, 2016.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2003-0215. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some

information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this final rule, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143-05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-3154; fax number: (919) 541-0246; email address: [ward.hillary@epa.gov](mailto:ward.hillary@epa.gov).

**SUPPLEMENTARY INFORMATION:**

*Acronyms and Abbreviations.* The following acronyms and abbreviations are used in this document.

ANPRM Advance notice of proposed rulemaking  
 ANSI American National Standards Institute  
 BMP Best management practice  
 BSER Best system of emission reduction  
 Btu British thermal unit  
 CAA Clean Air Act  
 CA LMR California Landfill Methane Rule  
 CBI Confidential business information  
 CDX Central Data Exchange  
 CEDRI Compliance and Emissions Data Reporting Interface  
 CFR Code of Federal Regulations  
 CO<sub>2</sub> Carbon dioxide  
 CO<sub>2</sub>e Carbon dioxide equivalent  
 EIA Energy Information Administration  
 EPA Environmental Protection Agency  
 ERT Electronic Reporting Tool  
 FID Flame ionization detector  
 GCCS Gas collection and control system  
 GHG Greenhouse gas  
 GHGRP Greenhouse Gas Reporting Program  
 GWP Global warming potential  
 HAP Hazardous air pollutant  
 HOV Higher operating value  
 IAMS Integrated assessment models  
 ICR Information collection request  
 IPCC Intergovernmental Panel on Climate Change  
 IWG Interagency working group  
 lb/MMBtu Pounds per million British thermal unit  
 LFG Landfill gas  
 LFGCost Landfill Gas Energy Cost Model  
 m<sup>3</sup> Cubic meters  
 Mg Megagram  
 Mg/yr Megagram per year  
 mph Miles per hour  
 MSW Municipal solid waste  
 mtCO<sub>2</sub>e Metric tons of carbon dioxide equivalent  
 MW Megawatt  
 MWh Megawatt hour  
 NAICS North American Industry Classification System

NESHAP National Emission Standards for Hazardous Air Pollutants  
 NMOC Nonmethane organic compound  
 NRC National Research Council  
 NSPS New source performance standards  
 NTTAA National Technology Transfer and Advancement Act  
 OAQPS Office of Air Quality Planning and Standards  
 OMB Office of Management & Budget  
 PM Particulate matter  
 PM<sub>2.5</sub> Fine particulate matter  
 ppm Parts per million  
 RCRA Resource Conservation and Recovery Act  
 RD&D Research, development, and demonstration  
 RFA Regulatory Flexibility Act  
 RIA Regulatory Impact Analysis  
 SBAR Small Business Advocacy Review  
 SC-CH<sub>4</sub> Social cost of methane  
 SC-CO<sub>2</sub> Social cost of carbon dioxide  
 SEM Surface emissions monitoring  
 SER Small entity representative  
 SO<sub>2</sub> Sulfur dioxide  
 SSM Startup, shutdown, and malfunction  
 Tg Teragram  
 TTN Technology Transfer Network  
 U.S. United States  
 USGCRP U.S. Global Change Research Program  
 VCS Voluntary consensus standard  
 VOC Volatile organic compound  
 WWW World Wide Web

*Organization of This Document.* The following outline is provided to aid in locating information in this preamble.

- I. Executive Summary
  - A. Purpose of Regulatory Action
  - B. Summary of Major Provisions
  - C. Costs and Benefits
- II. General Information
  - A. Does this action apply to me?
  - B. Where can I get a copy of this document and other related information?
- III. Background
  - A. Landfill Gas Emissions and Climate Change
  - B. What are the public health and welfare effects of landfill gas emissions?
  - C. What is the EPA's authority for reviewing the NSPS?
  - D. What is the purpose and scope of this action?
  - E. How would the changes in applicability affect sources currently subject to subparts Cc and WWW?
- IV. Summary of the Final NSPS
  - A. What are the control requirements?
  - B. What are the monitoring, recordkeeping, and reporting requirements?
  - C. Startup, Shutdown, and Malfunction Provisions
  - D. Other Corrections and Clarifications
- V. Summary of Significant Changes Since Proposal
  - A. Changes to Monitoring, Recordkeeping, and Reporting
  - B. Tier 4
  - C. Changes To Address Closed or Non-Productive Areas
  - D. Startup, Shutdown, and Malfunction Provisions
  - E. Definitions for Treated Landfill Gas and Treatment System and Treatment System Monitoring

- F. Other Corrections and Clarifications
- VI. Rationale for Significant Changes Since Proposal
  - A. Changes To Monitoring, Recordkeeping, and Reporting
  - B. Tier 4
  - C. Changes To Address Closed or Non-Productive Areas
  - D. Startup, Shutdown, and Malfunction Provisions
  - E. Definitions of Treated Landfill Gas and Treatment System
  - F. Other Corrections and Clarifications
- VII. Impacts of This Final Rule
  - A. What are the air quality impacts?
  - B. What are the water quality and solid waste impacts?
  - C. What are the secondary air impacts?
  - D. What are the energy impacts?
  - E. What are the cost impacts?
  - F. What are the economic impacts?
  - G. What are the benefits?
- VIII. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
  - B. Paperwork Reduction Act (PRA)
  - C. Regulatory Flexibility Act (RFA)
  - D. Unfunded Mandates Reform Act (UMRA)
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
  - H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51
  - J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
  - K. Congressional Review Act (CRA)

## I. Executive Summary

### A. Purpose of Regulatory Action

This action finalizes changes to the Standards of Performance for Municipal Solid Waste (MSW) Landfills (landfills new source performance standards or landfills NSPS) resulting from the EPA's review of the landfills NSPS under Clean Air Act (CAA) section 111. The EPA's review identified a number of advances in technology and operating practices for reducing emissions of landfill gas (LFG) and the final changes are based on our evaluation of those advances and our understanding of LFG emissions. In order to avoid possible confusion regarding which MSW landfills would actually be subject to these requirements, the EPA is establishing a new subpart XXX (40 CFR part 60, subpart XXX) rather than merely updating the existing subpart WWW (40 CFR part 60, subpart WWW).

The requirements in new subpart XXX apply to MSW landfills for which construction, reconstruction, or modification commenced after July 17, 2014, the date of the proposed rule. The requirements in subpart WWW continue to apply to MSW landfills for which construction, reconstruction, or modification was commenced on or after May 30, 1991 and on or before July 17, 2014. For a discussion of how changes in applicability affect sources currently subject to subparts Cc and WWW, see the proposed Emission Guidelines (80 FR 52110, August 27, 2016).

The resulting changes to the NSPS found in subpart XXX will achieve additional reductions in emissions of LFG and its components, including methane. This final rule is consistent with the President's 2013 Climate Action Plan,<sup>1</sup> which directs federal agencies to focus on "assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions." The final rule is also consistent with the President's Methane Strategy,<sup>2</sup> which directs the EPA's regulatory and voluntary programs to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs. These directives are discussed in detail in section III.A of this preamble. This regulatory action also resolves and clarifies several implementation issues that were previously addressed in amendments proposed on May 23, 2002 (67 FR 36475) and September 8, 2006 (71 FR 53271).

### 1. Need for Regulatory Action

Several factors led to today's final action. First, section 111 of the Clean Air Act (CAA) (42 U.S.C. 7411) requires the EPA to review standards of performance at least every 8 years and, if appropriate, revise the standards to reflect improvements in methods for reducing emissions. Second, a mandatory duty lawsuit was filed against the EPA for failure to review the NSPS by the statutorily required deadline. Under a consent decree resolving that lawsuit, the EPA agreed to

propose a review and take final action on the proposal. Third, the EPA has concluded that landfill owners or operators, as well as regulators, need clarification regarding issues that have arisen during implementation of the existing standards. Implementation issues include the definition of LFG treatment, among other topics. Fourth, landfills are a significant source of methane, a very potent greenhouse gas, for which there are cost-effective means of reduction, so this rule is an important element of the United States' work to reduce emissions that are contributing to climate change.

### 2. Legal Authority

CAA section 111(b)(1)(B) (42 U.S.C. 7411(b)(1)(B)) requires the EPA to "at least every 8 years review and, if appropriate, revise" new source performance standards. CAA section 111(a)(1) (42 U.S.C. 7411(a)(1)) provides that performance standards are to "reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." We refer to this level of control as the best system of emission reduction or "BSER."

As indicated above, the EPA has decided to finalize its review of the landfill NSPS in a new subpart rather than update existing requirements in 40 CFR part 60, subpart WWW. The EPA believes that either approach is legally permissible.<sup>3</sup> The final subpart XXX will appear in 40 CFR part 60 and will apply to landfills that commence construction, reconstruction, or modification after July 17, 2014.

### B. Summary of Major Provisions

The final NSPS apply to landfills that commenced construction, reconstruction, or modification after July 17, 2014 (the date of publication of the proposed NSPS). The final rule provisions are described below.

**Thresholds for Installing Controls.** The final NSPS retain the current design capacity threshold of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>), but reduce the nonmethane

<sup>1</sup> Executive Office of the President, "The President's Climate Action Plan" June 2013. <https://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>.

<sup>2</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. [https://www.whitehouse.gov/sites/default/files/strategy\\_to\\_reduce\\_methane\\_emissions\\_2014-03-28\\_final.pdf](https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf).

<sup>3</sup> The EPA believes that it has the legal authority in updating an NSPS to either propose and make changes to the existing subpart or to promulgate a new subpart and has previously done both. In either case, any substantive changes to the NSPS apply only to sources for which construction, reconstruction, or modification commenced on or after the date on which the proposed changes were published in the *Federal Register* (July 17, 2014).

organic compounds (NMOC) emission threshold for the installation and removal of a gas collection and control system (GCCS) from 50 megagrams per year (Mg/yr) to 34 Mg/yr. An MSW landfill that exceeds the design capacity threshold must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr. (A megagram is also known as a metric ton, which is equal to 1.1 United States (U.S.) short tons or about 2,205 pounds.) Consistent with the existing NSPS (40 CFR part 60, subpart WWW), the owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

**Emission Threshold Determination.** The EPA is finalizing an alternative site-specific emission threshold methodology for when a landfill must install and operate a GCCS. This alternative methodology, referred to as "Tier 4," is based on surface emission monitoring (SEM) and demonstrates whether or not surface emissions are below a specific threshold. The Tier 4 SEM demonstration allows landfills that exceed the threshold using modeled NMOC emission rates using Tier 1 or 2 to demonstrate that actual site-specific surface methane emissions are below the threshold. A landfill that can demonstrate that surface emissions are below 500 parts per million (ppm) for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded. Landfills that have calculated NMOC emissions of 50 Mg/yr or greater are not eligible for the Tier 4 emission threshold determination in order to prevent conflicting requirements between subpart XXX and the landfills NESHAP (40 CFR part 63, subpart AAAA). Many landfills that are subject to subpart XXX will also be subject to the landfills NESHAP. The landfills NESHAP requires landfills that exceed the size threshold (2.5 million Mg and 2.5 million m<sup>3</sup>) and exceed the NMOC emissions threshold (50 Mg/yr) to install and operate a GCCS.

**Low LFG Producing Areas.** The EPA is also finalizing criteria for determining when it is appropriate to cap or remove all or a portion of the GCCS. The final criteria for capping or removing all or a portion of the GCCS are: (1) The landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the

calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three successive test dates.

**Landfill Gas Treatment.** In the final NSPS, the EPA has addressed two issues related to LFG treatment. First, the EPA is clarifying that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but may be used for other beneficial uses such as vehicle fuel, production of high-British thermal unit (Btu) gas for pipeline injection, or use as a raw material in a chemical manufacturing process. Second, the EPA is finalizing the definition of *treated landfill gas* that applies to LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart XXX and defining *treatment system* as a system that filters, de-waters, and compresses LFG for sale or beneficial use. The definition of treatment system allows the level of treatment to be tailored to the type and design of the specific combustion equipment or the other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process in which the LFG is used. Owners or operators must develop a site-specific treatment system monitoring plan that includes monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. They also must keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for the end use of the treated LFG.

**Wellhead Operational Standards.** The EPA is finalizing changes to certain operational standards (*i.e.*, the requirement to meet specific operating limits) for nitrogen/oxygen level at the wellheads. Landfill owners or operators are not required to take corrective action based on exceedances of specified operational standards for nitrogen/oxygen levels at wellheads, but they must continue to monitor and maintain records of nitrogen/oxygen levels on a monthly basis in order to inform any necessary adjustments to the GCCS and must maintain records of monthly readings. The operational standard, corrective action, and corresponding recordkeeping and reporting remain for temperature and maintaining negative pressure at the wellhead.

**Surface Monitoring.** The EPA is finalizing the requirement to monitor all surface penetrations at landfills. In final 40 CFR part 60, subpart XXX, landfills must conduct SEM at all cover

penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required to be in place and operating according to the operational standards in final 40 CFR part 60, subpart XXX. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis at the specified intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

**Startup, Shutdown, and Malfunction.** The EPA is finalizing a requirement that standards of performance in the NSPS apply at all times, including periods of startup, shutdown, and malfunction (SSM). The EPA is also finalizing an alternative standard during SSM events: In the event the collection or control system is not operating, the gas mover system must be shut down and all valves in the collection and control system that could contribute to venting of the gas to the atmosphere must be closed within 1 hour of the collection or control system not operating.

**Other Clarifications.** The EPA is finalizing a number of clarifications to address several issues that have been raised by landfill owners or operators during implementation of the current NSPS and Emission Guidelines. These clarifications include adding criteria for when an affected source must update its design plan and clarifying when landfill owners or operators must submit requests to extend the timeline for taking corrective action. The EPA is also updating several definitions in the NSPS. In addition, while the EPA is not mandating organics diversion, we are finalizing two specific compliance flexibilities in the NSPS to encourage wider adoption of organics diversion and GCCS Best Management Practices (BMPs) for emission reductions at landfills. These compliance flexibilities are discussed in sections VI.A.1 and VI.A.2 (wellhead monitoring) and section V.B and V.B (Tier 4 emission threshold determination) of this preamble.

### C. Costs and Benefits

The final NSPS are expected to significantly reduce emissions of LFG and its components, which include methane, volatile organic compounds (VOC), and hazardous air pollutants (HAP). Landfills are a significant source of methane emissions, and in 2014 landfills represented the third largest source of human-related methane emissions in the U.S. This rulemaking applies to landfills that commence



construction, modification, or reconstruction after July 17, 2014. In the 5 years following July 17, 2014, the EPA estimates that 14 landfills will commence construction and 123 landfills will modify. Note that landfills are not expected to reconstruct (63 FR 32745, June 16, 1998).

To comply with the emissions limits in the final rule, owners or operators of new or modified MSW landfills are expected to install the least-cost control for collecting and treating or combusting LFG. The annualized net cost for the final NSPS is estimated to be \$6.0 million (2012\$) in 2025, when using a 7 percent discount rate. The annualized costs represent the costs compared to no changes to the current NSPS (*i.e.*, baseline) and include \$11 million to install and operate a GCCS, as well as \$0.08 million to complete the corresponding testing and monitoring. These control costs are offset by \$5.1 million in revenue from electricity sales, which is incorporated into the net control costs for certain landfills that are expected to generate revenue by using the LFG to produce electricity.

Installation of a GCCS to comply with the 34 Mg/yr NMOC emissions threshold at new or modified landfills would achieve reductions of 281 Mg/yr NMOC and 44,300 Mg/yr methane (about 1.1 million metric tons of carbon dioxide equivalent per year (mtCO<sub>2</sub>e/yr)) beyond the baseline in year 2025. In

addition, the final rule is expected to result in the net reduction of 26,000 Mg-CO<sub>2</sub>, due to reduced demand by landfills for electricity from the grid as landfills generate electricity from LFG. The NMOC portion of LFG can contain a variety of air pollutants, including VOC and various organic HAP. VOC emissions are precursors to both fine particulate matter (PM<sub>2.5</sub>) and ozone formation. These pollutants, along with methane, are associated with substantial health effects, welfare effects, and climate effects. The EPA expects that the reduced emissions will result in improvements in air quality and lessen the potential for health effects associated with exposure to air pollution related emissions, and result in climate benefits due to reductions of the methane component of LFG.

The EPA estimates that the final rule's estimated methane emission reductions and secondary CO<sub>2</sub> emission reductions in the year 2025 would yield global monetized climate benefits of \$31 million to approximately \$180 million, depending on the discount rate. Using the mean social cost of methane (SC-CH<sub>4</sub>) and social cost of CO<sub>2</sub> (SC-CO<sub>2</sub>), at a 3-percent discount rate, results in an estimate of about \$68 million in 2025 (2012\$).

The SC-CH<sub>4</sub> and SC-CO<sub>2</sub> are the monetary values of impacts associated with marginal changes in methane and CO<sub>2</sub> emissions, respectively, in a given

year. Each metric includes a wide range of anticipated climate impacts, such as net changes in agricultural productivity, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning.

With the data available, we are not able to provide quantified health benefit estimates for the reduction in exposure to HAP, ozone, and PM<sub>2.5</sub> for this rule. This is not to imply that there are no such benefits of the rule; rather, it is a reflection of the difficulties in modeling the direct and indirect impacts of the reductions in emissions for this sector with the data currently available.

Based on the monetized benefits and costs, the annual net benefits of the standards are estimated to be \$62 million (\$2012) in 2025, based on the average SC-CH<sub>4</sub> at a 3 percent discount rate, average SC-CO<sub>2</sub> at a 3 percent discount rate, and costs at a 7 percent discount rate.

## II. General Information

### A. Does this action apply to me?

This final rule addresses MSW landfills that are new, reconstructed, or modified after July 17, 2014, and associated solid waste management programs. Potentially affected categories include those listed in Table 1 of this preamble.

TABLE 1—REGULATED ENTITIES

| Category                                                     | NAICS <sup>a</sup> | Examples of affected facilities                                              |
|--------------------------------------------------------------|--------------------|------------------------------------------------------------------------------|
| Industry: Air and water resource and solid waste management. | 924110             | Solid waste landfills                                                        |
| Industry: Refuse systems—solid waste landfills .....         | 562212             | Solid waste landfills                                                        |
| State, local, and tribal government agencies .....           | 924110             | Administration of air and water resource and solid waste management programs |

<sup>a</sup>North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the new subpart. To determine whether your facility would be regulated by this action, you should carefully examine the applicability criteria in final 40 CFR 60.760 of subpart XXX. If you have any questions regarding the applicability of the final subpart to a particular entity, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

### B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action

is available through EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this action at <http://www.epa.gov/ttnatw01/landfill/landflpg.html>. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the final rule and key technical documents at this same Web site.

## III. Background

On July 17, 2014, the EPA proposed a new NSPS subpart (40 CFR part 60, subpart XXX) based on its ongoing review of the MSW Landfills NSPS (40

CFR part 60, subpart WWW) (79 FR 41796). On August 27, 2015 (80 FR 52162), the EPA issued a supplemental proposal to achieve additional reductions of LFG and its components, including methane, through a lower emission threshold at which MSW landfills must install and operate a GCCS. On August 27, 2015, the EPA issued a concurrent proposal for revised Emission Guidelines for existing MSW Landfills (80 FR 52100). The EPA considered information it received in response to an Advanced Notice of Proposed Rulemaking (ANPRM) for the MSW landfills Emission Guidelines (79 FR 41772) and a Notice of Proposed Rulemaking for existing landfills (80 FR 52100), in addition to the Notice of



Proposed Rulemaking for new landfills (79 FR 41796), in evaluating these final provisions for new sources.

#### A. Landfill Gas Emissions and Climate Change

In June 2013, President Obama issued a Climate Action Plan that directed federal agencies to focus on “assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions.”<sup>4</sup> Methane is a potent greenhouse gas (GHG) that is 28–36 times greater than carbon dioxide (CO<sub>2</sub>) and has an atmospheric life of about 12 years.<sup>5</sup> Because of methane’s potency as a GHG and its atmospheric life, reducing methane emissions is one of the best ways to achieve near-term beneficial impacts in mitigating global climate change.

The “Climate Action Plan: Strategy to Reduce Methane Emissions”<sup>6</sup> (the Methane Strategy) was released in March 2014. The strategy recognized the methane reductions achieved through the EPA’s regulatory and voluntary programs to date. It also directed the EPA to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs.

The EPA recognized the climate benefits associated with reducing methane emissions from landfills nearly 25 years ago. The 1991 NSPS Background Information Document<sup>7</sup> asserted that the reduction of methane emissions from MSW landfills was one of many options available to reduce global warming. The NSPS for MSW landfills, promulgated in 1996, also recognized the climate co-benefits of controlling methane (61 FR 9917, March 12, 1996).

<sup>4</sup> Executive Office of the President, “The President’s Climate Action Plan” June 2013. <https://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>.

<sup>5</sup> The IPCC updates GWP estimates with each new assessment report, and in the latest assessment report, AR5, the latest estimate of the methane GWP ranged from 28–36, compared to a GWP of 25 in AR4. The impacts analysis in this final rule is based on AR4 instead of AR5 (i.e., a GWP of 25) to be consistent with and comparable to key Agency emission quantification programs such as the Inventory of Greenhouse Gas Emissions and Sinks (GHG Inventory), and the GHGRP.

<sup>6</sup> Executive Office of the President, “Climate Action Plan Strategy to Reduce Methane”, March 2014. [https://www.whitehouse.gov/sites/default/files/strategy\\_to\\_reduce\\_methane\\_emissions\\_2014-03-28\\_final.pdf](https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf).

<sup>7</sup> Air Emissions from Municipal Solid Waste Landfills—Background Information for Proposed Standards and Guidelines, U.S. EPA (EPA-450/3-90-011a) (NTIS PB 91-197061) page 2–15.

A recent study assessed EPA regulations and voluntary programs over the period 1993–2013 and found that they were responsible for the reduction of about 130 million metric tons of methane emissions (equal to about 18 percent of the total U.S. methane emissions over that time period), leading to a reduction in atmospheric concentrations of methane of about 28 parts per billion in 2013<sup>8</sup> (compared to an observed increase in methane concentrations of about 80 ppb over those 20 years).

The review and final revision of the MSW landfills NSPS capitalizes on additional opportunities to achieve methane reductions while acknowledging historical agency perspectives and research on climate, a charge from the President’s Climate Action Plan, the Methane Strategy, and improvements in the science surrounding GHG emissions.

LFG is a collection of air pollutants, including methane and NMOC. LFG is typically composed of 50-percent methane, 50-percent CO<sub>2</sub>, and less than 1-percent NMOC by volume. The NMOC portion of LFG can contain various organic HAP and VOC. When the Emission Guidelines and NSPS were promulgated in 1996, NMOC was selected as a surrogate for MSW LFG emissions because NMOC contains the air pollutants that at that time were of most concern due to their adverse effects on health and welfare. Today, methane’s effects on climate change are also considered important. In 2014, methane emissions from MSW landfills represented 18.2 percent of total U.S. methane emissions and 1.9 percent of total U.S. GHG emissions (in carbon dioxide equivalent (CO<sub>2</sub>e)).<sup>9</sup> In 2014, MSW landfills continued to be the third largest source of human-related methane emissions in the U.S., releasing an estimated 133.1 million metric tons of CO<sub>2</sub>e.<sup>10</sup> For these reasons and because additional emissions reductions can be achieved at a reasonable cost, the EPA is finalizing changes to the NSPS that

<sup>8</sup> Melvin, A.M.; Sarofim, M.C.; Crimmins, A.R., “Climate benefits of U.S. EPA programs and policies that reduced methane emissions 1993–2013”, *Environmental Science & Technology*, 2016, in press. <http://pubs.acs.org/doi/pdf/10.1021/acs.est.6b00367>, DOI 10.1021/acs.est.6b00367.

<sup>9</sup> Total U.S. methane emissions were 731 Teragram (Tg) CO<sub>2</sub>e and total U.S. GHG emissions were 6,870.5 Tg in 2014. A teragram is equal to 1 million Mg. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) U.S. EPA “Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014.” Table ES–2. Available at <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>.

<sup>10</sup> Ibid, Section 7. Waste, Table 7–3.

are based on reducing the NMOC and methane components of LFG.

#### B. What are the public health and welfare effects of landfill gas emissions?

##### 1. Health Effects of VOC and Various Organic HAP

VOC emissions are precursors to both PM<sub>2.5</sub> and ozone formation. As documented in previous analyses (U.S. EPA, 2006,<sup>11</sup> 2010,<sup>12</sup> and 2014<sup>13</sup>), exposure to PM<sub>2.5</sub> and ozone is associated with significant public health effects. PM<sub>2.5</sub> is associated with health effects, including premature mortality for adults and infants, cardiovascular morbidity such as heart attacks, and respiratory morbidity such as asthma attacks, acute bronchitis, hospital admissions and emergency room visits, work loss days, restricted activity days and respiratory symptoms, as well as welfare impacts such as visibility impairment.<sup>14</sup> Ozone is associated with health effects, including hospital and emergency department visits, school loss days and premature mortality, as well as ecological effects (e.g., injury to vegetation and climate change).<sup>15</sup> Nearly 30 organic HAP have been identified in uncontrolled LFG, including benzene, toluene, ethyl benzene, and vinyl chloride.<sup>16</sup> Benzene is a known human carcinogen.

<sup>11</sup> U.S. EPA. RIA. *National Ambient Air Quality Standards for Particulate Matter*, Chapter 5. Office of Air Quality Planning and Standards, Research Triangle Park, NC. October 2006. Available on the Internet at <http://www.epa.gov/ttn/ecas/regdata/RIAs/Chapter%205--Benefits.pdf>.

<sup>12</sup> U.S. EPA. RIA. *National Ambient Air Quality Standards for Ozone*. Office of Air Quality Planning and Standards, Research Triangle Park, NC. January 2010. Available on the Internet at [http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental\\_analysis\\_full.pdf](http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental_analysis_full.pdf).

<sup>13</sup> U.S. EPA. RIA. *National Ambient Air Quality Standards for Ozone*. Office of Air Quality Planning and Standards, Research Triangle Park, NC. December 2014. Available on the Internet at <http://www.epa.gov/ttn/ecas1/regdata/RIAs/20141125ria.pdf>.

<sup>14</sup> U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). EPA-600-R-08-139F. National Center for Environmental Assessment—RTP Division. December 2009. Available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546>.

<sup>15</sup> U.S. EPA. Air Quality Criteria for Ozone and Related Photochemical Oxidants (Final). EPA/600/R-05/004aF—CF. Washington, DC: U.S. EPA. February 2006. Available on the Internet at <http://cfpub.epa.gov/ncea/CFM/recordisplay.cfm?deid=149923>.

<sup>16</sup> U.S. EPA. 1998. Office of Air and Radiation, Office of Air Quality Planning and Standards. “Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources, Chapter 2: Solid Waste Disposal, Section 2.4: Municipal Solid Waste Landfills”. Available at: <http://www.epa.gov/ttn/chief/ap42/ch02/final/c02s04.pdf>.

or existing, *i.e.*, any source other than a new source (CAA section 111(a)(6)). Since the revised NSPS apply to new (and modified or reconstructed) sources, any source that is not subject to subpart XXX will be subject to the revised Emission Guidelines found in 40 CFR part 60, subpart Cf. Any existing MSW landfill that modifies or reconstructs after July 17, 2014 would become a new source subject to the NSPS subpart XXX.

#### IV. Summary of the Final NSPS

##### A. What are the control requirements?

##### 1. Design Capacity and Emissions Thresholds

The revised NSPS retain the current design capacity threshold of 2.5 million Mg and 2.5 million m<sup>3</sup>, but reduce the NMOC emission threshold for the installation and removal of a GCCS from 50 Mg/yr to 34 Mg/yr for landfills that commence construction, reconstruction, or modification after July 17, 2014. An MSW landfill that exceeds the design capacity threshold must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr NMOC. The owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

##### 2. Tier 4

The current NSPS (40 CFR part 60, subpart WWW) provides that owners or operators determine whether the landfill has exceeded the NMOC emissions threshold using one of three available modeling approaches, known as Tiers 1, 2 and 3. The EPA is finalizing in subpart XXX an additional optional methodology based on site-specific surface methane emissions to determine when a landfill must install and operate a GCCS. This alternative emission threshold methodology, referred to as "Tier 4," is based on SEM and demonstrates that surface methane emissions are below a specific threshold. The Tier 4 SEM demonstration allows certain landfills that exceed modeled NMOC emission rate thresholds using Tier 1 or 2 to demonstrate that site-specific surface methane emissions are below a surface concentration threshold. A landfill that can demonstrate that surface emissions are below 500 ppm for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded. Owners or operators continue

to keep detailed records of each quarterly monitoring demonstration and must submit a Tier 4 surface emissions report annually. Upon a surface emissions reading of greater than 500 ppm methane, the landfill must submit a GCCS design plan and install and operate a GCCS.

Tier 4 is based on the results of quarterly site-specific methane emissions monitoring of the perimeter of the landfill and entire surface of the landfill along a pattern that traverses the landfill at 30-meter (98-ft) intervals, in addition to monitoring areas where visual observations may indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. If the landfill opts to use Tier 4 and there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill, the owner or operator must install a GCCS, and the landfill cannot return to Tier 1, 2, or 3 modeling to demonstrate that emissions are below the NMOC threshold.

Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg/yr, but less than 50 Mg/yr using Tier 1 or Tier 2. If both Tier 1 and Tier 2 indicate NMOC emissions of 50 Mg/yr or greater, Tier 4 cannot be used (a landfill need not model emissions under Tier 3 before using Tier 4). In order to verify that the landfill is eligible for Tier 4, the EPA is finalizing a provision to require landfill owners or operators that choose to use Tier 4 to continue to conduct Tier 1 and Tier 2 NMOC emission rate calculations and report results in the annual report.

In addition, the EPA is finalizing specific requirements for the use of Tier 4 for emission threshold determinations related to wind speed. Since accurate measurements can be compromised in even moderately windy conditions, the EPA is requiring the owner or operator to use a wind barrier, similar to a funnel or other device, to minimize surface air turbulence when onsite wind speed exceeds the limits in the rule. Thus, when a wind barrier is used, the final rule allows the Tier 4 surface emissions demonstration to proceed when the average on-site wind speed exceeds 4 mph, or gusts exceed 10 mph. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 mph. Although we are aware of the use of wind barriers in the field, the EPA intends to provide additional guidance on their use. In addition, the owner or operator must take digital photographs of the instrument setup, including the wind barrier. The photographs must be

time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration. The owner or operator must maintain those photographs per the recordkeeping requirements. Wind speed must be measured with an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The average wind speed must be determined at 5-minute intervals. The gust must be determined at 3-second intervals. Further, when taking surface measurements, the sampling probe must be held no more than 5 centimeters above the landfill surface (e.g., using a mechanical device such as a wheel on a pole).

The EPA is also limiting the use of Tier 4 at landfills with a GCCS installed. In order for a landfill with an operational GCCS to qualify for Tier 4, the GCCS must have operated for at least 75 percent of the 12 months prior to initiating Tier 4 testing. The EPA is finalizing reporting and recordkeeping requirements for the annual operating hours of destruction devices in order to verify that a landfill with a GCCS installed and opting for Tier 4 meets the GCCS criteria for having operated the system.

The EPA is also finalizing reporting and recordkeeping requirements to improve the transparency of SEM testing. To ensure that a GCCS is installed in a timely manner, the EPA is requiring a GCCS to be installed and operated within 30 months of the most recent NMOC emission rate report in which the calculated NMOC emission rate equals or exceeds 34 Mg/yr according to Tier 2, once there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill. To improve the transparency of SEM testing, landfill owners or operators must notify the delegated authority 30 days prior to conducting Tier 4 tests and maintain records of all SEM monitoring data and calibrations.

##### 3. Criteria for Removing GCCS

Landfill emissions increase as waste is added to a landfill, but decline over time; as waste decays, a landfill produces less and less methane and other pollutants. In the proposed revisions to the NSPS (79 FR 41811), the EPA requested comment on whether the three criteria for control device removal in 40 CFR part 60, subpart WWW were appropriate for proposed 40 CFR part 60, subpart XXX, and whether alternative criteria such as consecutive

## 2. Corrective Action

In a 1998 **Federal Register** notice (63 FR 32748, June 16, 1998), the EPA amended the wellhead monitoring provisions of 40 CFR part 60, subpart WWW to allow an alternative timeline for correcting wellhead exceedances to be submitted to the Administrator for approval. The rule change made the wellhead monitoring provisions consistent with the SEM provisions, which allow an alternative remedy and corresponding timeline for correcting an exceedance to be submitted to the Administrator for approval. The EPA noted in the 1998 preamble that any timeline extending more than 120 days must be approved by the regulating agency. Since 1998, questions have been raised about the timing of correcting wellhead exceedances and whether a landfill needs agency approval for corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for expanding the GCCS.

The EPA clarified in the proposed subpart XXX that, with the exception of system expansion, all corrective actions expected to exceed 15 calendar days should be submitted to the agency for approval of an alternate timeline. Additionally, the EPA proposed that if a landfill owner or operator expects the system expansion to exceed the 120-day allowance period, it should submit a request and justification for an alternative timeline. Further, the EPA solicited comment on extending the requirement for notification from 15 days to as soon as practicable, but no later than 60 days.

The proposed Emission Guidelines noted that the proposed removal of operational standards for nitrogen/oxygen and temperature would drastically reduce the number of requests for alternative corrective action timelines. However, the requirement to maintain negative pressure at the wellhead remained in the proposal. Therefore, the EPA proposed a timeline for correcting positive pressure, including a requirement to submit an alternative corrective action timeline request to the Administrator if the landfill cannot restore negative pressure within 15 calendar days or the initial failure to maintain negative pressure and the landfill is unable to (or does not plan to) expand the gas collection within 120 days of the initial exceedance.

submitting requests, an example of regulatory guidance for HOV demonstrations can be found at [http://www.epa.ohio.gov/portals/34/document/guidance/gd\\_1002.pdf](http://www.epa.ohio.gov/portals/34/document/guidance/gd_1002.pdf).

The EPA explained in the preamble for the 2015 Emission Guidelines proposal that it did not specify a schedule in the proposed rule language by when a landfill would need to submit alternative timeline requests because the EPA determined that investigating and determining the appropriate corrective action, as well as the schedule for implementing corrective action, would be site specific and depend on the reason for the exceedance (80 FR 52126). In addition, the EPA requested comment (80 FR 52126) on an alternative timeline that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days from when an exceedance is identified.

*Comment:* The EPA received comments on the proposed changes, including the time allowed for corrective action and for submitting alternative timeline requests for approval by the Administrator. Regarding the timeframe for submitting a request, several state agencies recommended extending the 15-day timeline for a request to be submitted and indicated that 15 days is not sufficient time to evaluate the problem and plan for corrective action, which may often involve construction activities. There were varied opinions from the state agencies on what length of time beyond 15 days is appropriate. Two agencies supported an extension to as soon as practicable but no later than 60 days, while other agencies specified that the request should be submitted within 30 days from the initial exceedance.

Industry representatives from private and publicly owned landfills as well as waste industry consultants opposed the requirement to submit a request for an alternative corrective action timeline within 15 days. The commenters were concerned that 15 days is not enough time to assess the appropriate solution across miles of interconnected piping. In addition, the commenters were concerned that a 15-day time period would increase the paperwork for both the landfill and the reviewing regulatory agency. One commenter indicated that while many repairs can be completed within 60 days, some repairs, especially in cold weather climates, may take longer. One industry commenter suggested that a timeframe of 90 days to complete any adjustments or repairs is appropriate. If the corrections could not be made within 90 days, the commenter stated that the landfill would be prepared to have the system expanded within 120 days.

Industry commenters raised the issue that the timeline for corrective action for

surface exceedances in the current subpart WWW regulations, 40 CFR 60.755(c)(4)(v), allow 120 days to install a new well or other collection device or submit an alternative timeline for another corrective action. These commenters also indicated that the 1998 NSPS amendments modified the corrective action for wellhead parameter exceedances to be consistent with the timeframe allowed for correcting surface exceedances (63 FR 32748, June 16, 1998). The commenters also noted that the 1998 amendments recognized that installation of a new well may not always be the appropriate corrective action for remedying a wellhead exceedance.

Despite the 1998 rule amendments, several of these industry commenters note that interpretation and implementation of the 1998 amendments to 40 CFR 60.755(a)(3) have been inconsistent, with some agencies only requiring the landfill owner or operator to submit requests if the corrective action will take longer than 120 days. Other states have taken the position that any exceedances that cannot be resolved within 15 days must automatically result in a requirement to expand the GCCS. One commenter referenced determinations that required landfills to submit an alternative timeline request within 15 days. One commenter indicated that the original rule never anticipated notification and a request for an alternative compliance timeline within 15 days, while another commenter indicated that the state of Texas requires landfills to submit alternative timelines only if the corrective action requires more than 120 days to complete.

In consideration of the 1998 final rule notice, industry commenters, recommended that EPA require landfill owners or operators to submit an alternative timeline request for approval as soon as practicable and only in circumstances in which a system expansion or alternative corrective action will require more than 120 days to complete. One of the commenters suggested that this approach was consistent with the Petroleum Refineries NSPS (40 CFR part 60, subpart Ja). The commenter noted that while the Landfills NSPS requires special approval to avoid the default corrective action of expanding the GCCS, the Refineries NSPS requires a root cause analysis to identify the appropriate corrective action, without specifying a default approach. The Refineries NSPS requires a root cause analysis and a corrective action analysis for exceedances and requires the facility to implement the corrective action within

45 days. If the corrective action cannot be completed in 45 days, the refinery must document and record all corrective actions completed to date. For actions not fully completed by day 45, they must develop an implementation schedule, as soon as practicable, for beginning and completing all corrective action.

One commenter provided some ideas for landfills to demonstrate good faith effort to comply with the 120-day corrective action schedule. They suggested the rules clarify that the landfill owner or operator is required to submit a notification to the agency that identifies and describes the diagnosis performed, the results of the diagnosis, identifies the corrective measure or alternative remedy to be implemented and reason(s) why system expansion is not appropriate to correct the exceedance. Under such an approach, corrective measures other than expansion that take 0–60 days to complete from the initial exceedance would not require any notification or approval but they would be documented in the annual compliance report. For corrective actions other than expansion that take longer than 60 days but less than 120 days to complete, the landfill owner or operator would notify the regulatory agency by day 75 from the date of the initial exceedance. This would allow 45 days for the agency to review and comment, and such notification would not require agency approval so as not to delay the site from proceeding with and completing the corrective action, as long as the corrective actions are completed within the 120-day timeframe.

Industry commenters indicated that the timeline for corrective action is affected by other regulations. Two of these commenters noted that any corrective action that involves disturbing the final landfill cover could delay diagnosing the problem. All of these commenters noted that a 60-day timeframe is problematic for landfills affected by the Asbestos NESHAP (40 CFR part 61, subpart M), which requires a 45-day notification prior to disturbing areas that may have asbestos containing material.

**Response:** The EPA is retaining the corrective action requirements for temperature in addition to negative pressure. The EPA recognizes the importance of temperature as a critical indicator of landfill fires and its effect on methanogens. Further, removal of the corrective action requirements for temperature could have the unintended consequence of improper operation of a GCCS, which could lead to a subsurface fire. Due to the important of this

parameter, e-reporting requirements for excessive temperatures have also been established to better assess landfill fires.<sup>39</sup>

After carefully considering the comments received and evaluating the available data, the EPA is finalizing corrective action requirements that generally give owners or operators 60 days to investigate and determine the appropriate corrective action and then implement that action. The EPA has retained the requirements for temperature and positive pressure, in that if positive pressure or temperature exceedances exist, action must be initiated to correct the exceedances within 5 calendar days. This requirement has been retained to ensure the landfill takes prompt action to ensure the GCCS remains well-operated. The EPA recognizes, however, that the appropriate corrective action, as well as a schedule to implement it, is site-specific and depends on the reason for the exceedance. Therefore, for corrective action that takes longer than 60 days after the initial exceedance to implement, the EPA is providing flexibility for the landfill to determine the appropriate course of action based on a root cause analysis. Specifically, if the owner or operator cannot achieve negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) at the GCCS wellhead within 15 days, then the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure or temperature above 55 degrees Celsius (131 degrees Fahrenheit) was first measured. An implementation schedule is required for exceedances that take longer than 60 days to correct. A root cause analysis is an assessment conducted through a process of investigation to determine the primary cause(s), and any other contributing cause(s), of positive pressure at a wellhead or temperature above 55 degrees Celsius (131 degrees Fahrenheit). The root cause analysis and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be kept on site as a record, but they do not have to be submitted or approved.

If negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within

60 days, then the owner or operator must develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure or temperature reading. The implementation schedule, root cause analysis, and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be submitted in the facility's next annual report, but these items do not have to be approved.

If the exceedance cannot be corrected (or is not expected to be corrected) within 120 days, then the owner or operator must submit the root cause analysis, plan for corrective action to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit), and the corresponding implementation timeline to the Administrator. The Administrator must approve the plan for corrective action and the corresponding timeline. The owner or operator must submit the proposed corrective action and timeline to the Administrator for approval as soon as practicable but no later than 75 days after the initial exceedance. Requiring approval by the regulatory agency for corrective action timelines that extend beyond 120 days is consistent with the corrective action timeline for surface emissions in 40 CFR 60.765(c)(4)(v). This approach also prevents the landfill owner or operator from delaying submittals for corrective action requests until day 120. Once the negative pressure has been restored, the facility must document the corrective actions taken in the facility's next annual report.

For the corrective action required to address positive pressure, the owner or operator must keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s); the date for corrective action(s) already completed following the positive pressure reading; and for action(s) not already completed within 60 days of the initial positive pressure reading, a schedule for implementation, including proposed commencement and completion dates. For corrective actions taking longer than 60 days to correct the exceedance, the owner or operator would also include in the annual report the root cause analysis, recommended corrective action(s), date corrective actions were completed, and schedule for implementing corrective actions. The owner or operator must also notify the Administrator within 75 days. For corrective actions that take longer than 120 days to correct the exceedance, the

<sup>39</sup> The need to rely on temperature in addition to pressure is also illustrated in the report titled Subsurface Heating Events at Solid Waste and Construction and Demolition Debris Landfills: Best Management Practices at <http://www.epa.chio.gov/portals/34/document/guidance/subsurface%20heating%20events.1009.pdf>.

owner or operator would include, in a separate notification submitted to the Administrator for approval as soon as practicable, but no later than 75 days after the initial positive pressure reading, the root cause analysis, recommended corrective action(s), date corrective actions taken to date were completed, and proposed schedule for implementing corrective actions.

### 3. Landfills Recirculating Leachate or Adding Other Liquids

In the 2014 ANPRM and 2015 proposed Emission Guidelines, the EPA solicited input on whether additional action should be taken to address emissions from wet landfills (*i.e.*, landfills that recirculate leachate or add liquids). Commenters differed on whether the EPA should require separate thresholds or different lag times for landfills that recirculate leachate or add liquids. (The lag time is the time period between when the landfill exceeds the emission rate threshold and when controls are required to be installed and started up.) Commenters supported more environmentally protective requirements for wet landfills and asserted that wet landfills produce more methane but actually collect less. Commenters stated that the EPA should shorten the lag time for installing controls. Other commenters opposed separate requirements for wet landfills and contended that additional requirements for wet landfills would achieve minimal emission reductions and would result in a significant additional burden for landfills that recirculate leachate. One commenter said that the EPA should focus on potential emission reductions at landfills that recirculate leachate.

Commenters also differed on what methane generation rate (k-value) should be used in the landfills NSPS for wet landfills. One commenter indicated that they have previously provided several studies on k-values for wet landfills to EPA and urged the EPA to update the emission factors for wet landfills based on this literature prior to adjusting the control requirements at landfills recirculating leachate or adding other liquids. Another commenter asked the EPA to use higher, more representative k-values, or perhaps a sensitivity analysis for a range of k-values to estimate the impacts of controlling emissions from wet landfills in the landfills NSPS.

Based on the diverse nature of the feedback provided and several other outstanding EPA actions affecting the control requirements and emission factors for wet landfills, the EPA is not

creating separate emission threshold or lag time requirements for wet landfills in this action. Instead, the EPA believes it is appropriate to further assess emissions from wet landfills prior to taking additional action on control requirements or changes to the k-values. As a result, the EPA is finalizing additional electronic reporting requirements for wet landfills with a design capacity of 2.5 million Mg or greater to inform potential future action on wet landfills. The final rule is limiting reporting of this additional data to wet landfills that meet the current size threshold of 2.5 million Mg of design capacity to be consistent with the universe of landfills that are affected by the rule.

Specifically, the final NSPS requires annual electronic reporting of the volume of leachate recirculated (gallons per year) and the volume of other liquids added (gallons per year), as well as the surface area over which the leachate is recirculated (or sprayed), and the surface area (acres) over which any leachate or liquids are applied. The quantity of leachate recirculated or liquids added should be based on company records or engineering estimates. The initial report will collect historical data for the 10 years preceding the initial annual reporting year, to the extent the data are available in on-site records, along with data corresponding to the initial reporting year. After the initial report, the other annual electronic reports will include only the quantities of leachate recirculated and/or added liquid and their corresponding surface areas for each the subsequent reporting year. The EPA believes many landfills, especially those operating with a Research, Development, and Demonstration (RD&D) permit, already keep records and may submit reports containing quantities of liquids added. So, the effort to track these additional data is expected to be minimal. RD&D permits are issued through Resource Conservation and Recovery Act (RCRA) subtitle D part 258 regulations for MSW landfills. The EPA is also aware of some state rules that require reporting of leachate or added liquids outside of the Clean Air Act reporting requirements. Consolidating these data in an electronic format in a central repository can help inform how leachate or added liquids affect LFG generation and collection whether air emission standards should be adjusted for wet landfills.

The EPA is also requiring the landfill to report the total waste disposed (Mg) in the area with recirculated leachate and/or added liquids, as well as the

annual waste acceptance rates (Mg/yr) in those same areas. Recognizing that the waste quantities may be tracked at the scale house entry to the landfill and not the specific cell where the liquids are added, the EPA is allowing the landfill to report data based on on-site records or engineering estimates.

The EPA is allowing owners or operators of landfills to discontinue annual reporting of the wet landfill report after the landfill has submitted its closure report recognizing that this information would be difficult to obtain after the landfill closed, these landfills are unlikely to still be adding liquids if closed, and also because the gas generation from these landfills are on the downward side of their gas generation curve.

The EPA is also aware of annual LFG collected and annual LFG generation data electronically reported to 40 CFR part 98, subpart HH of the GHGRP and therefore the EPA is not requesting reporting of these data in this rule to avoid duplicative requests. However, the EPA may link the wet landfill practices data collected under the landfills NSPS with the annual gas collected data under subpart HH in order to inform how liquids addition affects LFG emissions. Similarly, the EPA understands that precipitation may affect gas generation. However, since precipitation data are readily available through the National Weather Service, the EPA is not requiring reporting of this parameter. Instead, the EPA will use existing electronic data already available to link up with data collected under this final rule. These additional data will be used to assess the appropriateness of potential future action on wet areas of landfills.

The Paperwork Reduction Act (PRA) requires each federal agency to obtain OMB approval before undertaking a collection of information directed to 10 or more people. The PRA applies whether a "collection of information is mandatory, voluntary, or required to obtain or retain a benefit." The EPA believes the additional data on wet landfills will be beneficial for evaluating whether separate thresholds for wet landfills are appropriate when revising future MSW landfill standards. Because the EPA understands that many of the data elements in the wet landfill report, including quantities of leachate or other liquids added and the surface areas over which those liquids are added are tracked at a state level as part of a leachate management or RD&D permit, the EPA does not anticipate these data. Additionally, the EPA is allowing landfill owners or operators to report the data elements in the wet landfill

monitoring report using either engineering estimates or on-site records to minimize the burden on respondents, depending on the types of records the landfill owner/operator may keep.

This is a new rule and a new collections submitted to OMB under EPA ICR number 2498.03. This collection is similar to collections for subpart WWW. Thus, many of the line item burden estimates in this ICR estimate are the same as the burdens submitted to OMB under ICR number 1557.09 for the most recent ICR renewal for subpart WWW.

#### 4. Portable Analyzers

Commenters on the proposed NSPS (79 FR 41796) requested that the EPA specify that portable gas composition analyzers are an acceptable alternative to Methods 3A or 3C, and noted that these devices are commonly used in practice to measure wellhead parameters and are calibrated according to the manufacturer's specifications. Currently, approvals of these analyzers are done on a case-by-case basis. Therefore, in the preamble for the proposed revisions of the Emission Guidelines (80 FR 52141), the EPA requested data or information on using a portable gas composition analyzer according to Method 3A for wellhead monitoring. The EPA also requested data on other reference methods used for calibrating these analyzers.

*Comment:* Many commenters supported the use of portable gas composition analyzers and requested that the EPA specify that these analyzers may be used as an approved alternative monitoring method for well monitoring. Three state agencies indicated the use of the portable analyzers is common practice. One of these agencies stated that Method 3A and Method 3C are designed to be used in "quasi-CEMS" and/or "laboratory benchtop" situations and most landfill operators are not using this type of equipment to test wellhead LFG; instead, landfill operators are using handheld-size portable analyzers. Another state agency stated that portable gas composition analyzers (e.g., Landtec GEM 2000) are a standard for conducting MSW landfill well monitoring and the analyzers provide additional information on gas composition than what the current Emission Guidelines require, which provides operators with a better understanding of the condition of the landfill. This commenter said that a primary advantage of portable gas composition analyzers, for both landfills and regulators, is that these devices take and record the monitored readings (as well as other information on gas

composition that is not required to be monitored in the Emission Guidelines), which can then be downloaded into a spreadsheet and prevent landfills from making data collection mistakes. The commenter suggested that the EPA and state air pollution control agencies would benefit if the EPA were to require landfills to submit, in their semi-annual reports, all of the monitoring data recorded by portable gas composition analyzers.

One commenter stated that most portable gas composition analyzers can be used to measure the oxygen level at the wellhead and can be calibrated according to Method 3A, but are unlikely to be calibrated according to Method 3C (to measure oxygen or nitrogen levels) because such calibration requires the use of gas chromatograph equipment with a thermal conductivity detector and integrator. The commenter said that Method 3A is straightforward and does not specify a particular technology. Several commenters specifically referenced the comments from an equipment manufacturer, which provided specific details on how its Landtec GEM Series portable analyzers are able to comply with each specific requirement in Method 3A, including the calibration requirements. Two of these commenters said that portable gas composition analyzers should be allowed in both the Emissions Guidelines and NSPS. Another of these commenters requested that the EPA add language to the rule to recognize that balance gas is commonly used as a surrogate for nitrogen.

With regard to the EPA's request for data on other reference methods used for calibrating portable gas composition analyzers, one commenter suggested that the EPA allow ASTM D6522 as an alternative to Method 3A because an analyzer can easily be calibrated for oxygen alone following ASTM D6522. The commenter stated that although the QA/QC procedures in ASTM D6522 are different from Method 3A, they are just as rigorous as Method 3A. The commenter stated that it has extensive data available showing portable gas composition analyzers are routinely calibrated according to ASTM Method D6522 for measuring NO<sub>x</sub>, CO, and oxygen during engine testing. This commenter also stated that any analyzer or device must be calibrated according to an EPA approved method and not just manufacturer's specifications.

*Response:* The EPA appreciates the commenters providing information regarding the use of portable gas composition analyzers for landfill monitoring. Commenters provided data showing that their portable gas

composition analyzers are used to monitor the oxygen level at a wellhead and are capable of meeting the calibration requirements in Method 3A. Therefore, in today's action, we are clarifying the use of portable gas composition analyzers with Method 3A. A portable gas composition analyzer may be used to monitor the oxygen level at a wellhead provided that the portable analyzer is calibrated and meets all QA/QC according to Method 3A. Although we did not receive enough information regarding calibration methods that could be used on a portable gas composition analyzer to monitor the nitrogen level at a wellhead, any portable combustion monitor analyzer that uses gas chromatography and thermal conductivity technology may be used with Method 3C. Other technologies for the measurement of nitrogen may be used in lieu of Method 3C through the administrative alternative test method process outlined in 40 CFR 60.8(b)(2).

Regarding the suggestion to allow ASTM D6522–11 as an alternative to Method 3A, the EPA thanks the commenter for their perspective. As long as all the quality assurance is conducted as required by ASTM D6522–11, then ASTM D6522–11 may be used as an alternative to Method 3A for wellhead monitoring (prior to combustion). Examples of quality assurance required by ASTM D6522–11 include, but are not limited to: Analyzers must have a linearity check, interference check, bias check using mid-level gases, stability check, and be calibrated before a test; and a calibration error check and the interference verification must be conducted after the testing has occurred. Due to a different sample matrix typically found in post-combustion gas streams as stated in the applicability of ASTM D6522–11, the interference check must be done on the oxygen measurement with the appropriate gases (e.g., carbon dioxide, VOC mixture, and methane) and concentration ranges. The ASTM D6522–11 method also has calibrations before and calibration checks after testing. According to Methods 3A, 3C, and ASTM D6522–11, the data are valid only when they pass the bias check or zero and upscale calibration error check. The EPA does not believe manufacturers' specifications are rigorous enough to ensure data are of a proper quality.

#### 5. More Precise Location Data

The EPA proposed more specific requirements for reporting the locations where measured methane surface emissions are 500 ppm above



## Attachment D

U.S. EPA, Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills; **Final Rule and Guideline, 61 Fed. Reg. 9,905 (Mar. 12, 1996)** (excerpts)

**§ 706.2 Certifications of the Secretary of the Navy under Executive Order 11964 and 33 U.S.C. 1605.**

\* \* \* \* \*

TABLE FIVE

| Vessel                  | No.    | Masthead lights not over all other lights and obstructions. annex I, sec. 2(f) | Forward masthead light not in forward quarter of ship. annex I, sec. 3(a) | After masthead light less than 1/2 ship's length aft of forward masthead light. annex I, sec. 3(a) | Percentage horizontal separation attained |
|-------------------------|--------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------|
| USS PAUL HAMILTON ..... | DDG 60 | X                                                                              | X                                                                         | X                                                                                                  | 20.4                                      |

Dated: February 25, 1996.

**R. R. Pixa,**

*Captain, JAGC, U.S. Navy, Deputy Assistant Judge Advocate General (Admiralty).*

[FR Doc. 96-5837 Filed 3-11-96; 8:45 am]

BILLING CODE 3810-FF-P

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 51, 52, and 60**

[AD-FRL-5437-8]

RIN 2060-AC42

**Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule and guideline.

**SUMMARY:** This action adds subparts WWW and Cc to 40 CFR part 60 by promulgating standards of performance for new municipal solid waste landfills and emission guidelines for existing municipal solid waste landfills. This action also adds the source category "municipal solid waste landfills" to the priority list in 40 CFR Part 60, § 60.16, for regulation under section 111 of the Clean Air Act. These standards and emission guidelines implement section 111 of the Clean Air Act and are based on the Administrator's determination that municipal solid waste landfills cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. The emissions of concern are non-methane organic compounds

(NMOC) and methane. NMOC include volatile organic compounds (VOC), hazardous air pollutants (HAPs), and odorous compounds. VOC emissions contribute to ozone formation which can result in adverse effects to human health and vegetation. Ozone can penetrate into different regions of the respiratory tract and be absorbed through the respiratory system. The health effects of exposure to HAPs can include cancer, respiratory irritation, and damage to the nervous system. Methane emissions contribute to global climate change and can result in fires or explosions when they accumulate in structures on or off the landfill site. The intended effect of the standards and guidelines is to require certain municipal solid waste landfills to control emissions to the level achievable by the best demonstrated system of continuous emission reduction, considering costs, nonair quality health, and environmental and energy impacts. **EFFECTIVE DATE:** Effective on March 12, 1996.

**ADDRESSES:** Background Information Document. The background information document for the promulgated standards may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Please refer to "Air Emissions from Municipal Solid Waste Landfills—Background Information for Final Standards and Emission Guidelines," EPA-453/R-94-021. The Background Information Document contains: (1) A summary of all the public comments made on the proposed standards and the Notice of Data Availability as well as the Administrator's response to these

comments, (2) a summary of the changes made to the standards since proposal, and (3) the final Environmental Impact Statement, which summarizes the impacts of the standards.

**Docket.** Docket No. A-88-09, containing supporting information used in developing the promulgated standards, is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, except for Federal holidays at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (MC-6102), 401 M Street SW., Washington, DC 20460 [phone: (202) 260-7548]. The docket is located at the above address in Room M-1500, Waterside Mall (ground floor). A reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** For information on the regulation of municipal solid waste landfills, contact Ms. Martha Smith, Waste and Chemical Processes Group, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-2421.

**SUPPLEMENTARY INFORMATION:**

**Judicial Review**

Under section 307(b)(1) of the Clean Air Act, judicial review of the actions taken by this notice is available *only* by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged



later in civil or criminal proceedings brought by the EPA to enforce these requirements.

The following outline is provided to aid in locating information in the introductory text (preamble) to the final standards.

- I. Acronyms, Abbreviations, and Measurement Units
  - A. Acronyms
  - B. Abbreviations and Measurement Units
  - C. Conversion Factors and Commonly Used Units
- II. Background
- III. Summary of Considerations in Developing the Standards and Emission Guidelines
  - A. Purpose of the Regulation
  - B. Technical Basis of the Regulation
  - C. Stakeholders and Public Involvement
- IV. Summary of the Standards, Emission Guidelines, and Methods
- V. Impacts of the Standards and Emission Guidelines
  - A. Environmental Impacts
  - B. Cost and Economic Impacts
- VI. Significant Changes to the Proposed Standards and Emission Guidelines
  - A. Design Capacity Exemption
  - B. Emission Rate Cutoff
  - C. Collection System Design Specifications
  - D. Timing for Well Placement
  - E. Operational Standards
  - F. Surface Emission Monitoring
  - G. Model Default Values
- VII. Permitting
  - A. New Source Review Permits
  - B. Operating Permits
- VIII. Administrative Requirements
  - A. Docket
  - B. Paperwork Reduction Act
  - C. Executive Order 12866
  - D. Executive Order 12875
  - E. Unfunded Mandate Reform Act
  - F. Regulatory Flexibility Act
  - G. Miscellaneous

#### I. Acronyms, Abbreviations, and Measurement Units

The following definitions, acronyms, and measurement units are provided to clarify the preamble to the final rule.

##### A. Acronyms

BDT—best demonstrated technology  
BID—background information document  
CAA—Clean Air Act  
CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act  
EG—emission guideline(s)  
EPA—Environmental Protection Agency  
FR—**Federal Register**  
HAP—hazardous air pollutant  
LFG—landfill gas  
MSW—municipal solid waste  
NMOC—nonmethane organic compounds  
NPV—net present value  
NSPS—new source performance standards

NSR—new source review  
OMB—Office of Management and Budget  
PSD—prevention of significant deterioration  
RCRA—Resource Conservation and Recovery Act  
VOC—volatile organic compound(s)

##### B. Abbreviations and Measurement Units

J/scm—joules per standard cubic meter  
m—meter  
Mg—megagram  
mm—millimeter  
ppm—parts per million  
ppmv—parts per million by volume  
tpy—tons per year  
yr—year

##### C. Conversion Factors and Commonly Used Units

1 meter = 3.2808 feet  
1 megagram = 1.1023 tons = 2204.6 pounds  
1 cubic meter = 35.238 cubic feet = 1.3069 cubic yards  
1 cubic meter = 0.0008101 acre-feet  
Degrees Celsius = (degrees Fahrenheit – 32)/1.8

#### II. Background

The United States Environmental Protection Agency (EPA) originally considered regulating MSW landfill emissions under a RCRA subtitle D rulemaking. However, the Administrator decided to regulate MSW landfill emissions under the authority of the CAA, and announced the decision in the **Federal Register** on August 30, 1988 (53 FR 33314). The EPA decided to propose regulation of new MSW landfills under section 111(b) of the CAA and to propose EG for existing MSW landfills under section 111(d).

The EPA published a proposal of this NSPS and EG in the **Federal Register** on May 30, 1991 (56 FR 24468).

Following the receipt of new data and changes in the modeling techniques, the EPA published a Notice of Data Availability in the **Federal Register** on June 21, 1993 (56 FR 33790).

Under the authority of section 111(b)(1)(A) of the CAA, today's notice adds the source category MSW landfills to the priority list in 40 CFR 60.16 because, in the judgement of the Administrator, it contributes significantly to air pollution which may reasonably be anticipated to endanger public health and welfare. Further rationale for this finding is contained in section 1.1.1 of the promulgation BID (EPA-453/R-94-021).

Today's notice promulgates the final NSPS and EG for MSW landfills. The promulgation BID "Air Emissions from

Municipal Solid Waste Landfills—Background Information for Final Standards and Guidelines" (EPA 453/R-94-021) summarizes all public comments on the proposed NSPS and EG and the EPA responses. For further discussion of stakeholder and public involvement in the development of the rules see section III.C. of this preamble.

Recent information suggests that mercury might be emitted from landfills. The EPA is still looking at the possibility and will take action as appropriate in the future under the landfill national emission standards for hazardous air pollutants.

#### III. Summary of Considerations in Developing the Standards and Emission Guidelines

##### A. Purpose of the Regulation

Landfill gas emissions contain methane, carbon dioxide, and more than 100 different NMOC, such as vinyl chloride, toluene, and benzene. Studies indicate that MSW landfill gas emissions can at certain levels have adverse effects on both public health and welfare. The EPA presented concerns with the health and welfare effects of landfill gases in the preamble to the proposed regulations (56 FR 24468).

Briefly, specific health and welfare effects from LFG emissions are as follows: NMOC contribute to ozone formation; some NMOC are known or suspected carcinogens, or cause other noncancer health effects; NMOC can cause an odor nuisance; methane emissions present a well-documented danger of fire and explosion on-site and off-site, and contribute to global climate change as a major greenhouse gas. Today's rules will serve to significantly reduce these potential problems associated with LFG emissions.

##### B. Technical Basis of the Regulation

Today's regulations are based on extensive data analysis and consideration of several alternatives. Prior to proposal, the EPA developed an extensive data base, using survey information from approximately 1,200 landfills, along with emissions information from literature, State and local agencies, and industry test reports. The preamble to the proposed regulations presented a detailed discussion of the data used to develop the rule and the regulatory alternatives considered (56 FR 24476).

After proposal, the EPA continued to gather new information and received new data through public comments. The EPA published this new information in a Notice of Data Availability on June 21, 1993 (56 FR 33790). In addition to

public comments, the EPA held consultations with industry under the authority of Executive Order 12875 (See section VIII of this document for a detailed discussion of the Executive Order).

Based on the new information, the EPA re-assessed the impacts of the alternatives and made changes to the final regulation. The most significant changes to the regulation are summarized in section VI of this preamble. Detailed rationales for these changes as well as more minor changes are provided in the final BID (EPA 453/R-94-021).

In keeping with the EPA's common sense initiative, several of the changes were made to streamline the rule and to provide flexibility. Examples of this streamlining and increased flexibility include focusing control on the largest landfills, removing the gas collection system prescriptive design specifications, and more reasonable timing for the installation of collection wells. All of these changes are discussed further in section VI of this preamble.

#### C. Stakeholders and Public Involvement

Prior to proposal, in accordance with section 117 of the CAA, the EPA had consultations with appropriate advisory committees, independent experts, Federal departments and agencies. In addition, numerous discussions were held with industry representatives and trade associations.

After proposal, the EPA provided interested persons the opportunity to comment at a public hearing and through a written comment period. Comment letters were received from 60 commenters including industry representatives, governmental entities, environmental groups, and private citizens. A public hearing was held in Research Triangle Park, North Carolina, on July 2, 1991. This hearing was open to the public and five persons presented oral testimony on the proposed NSPS and EG.

On June 21, 1993, a supplemental notice of data availability to the May 30, 1991 proposal appeared in the **Federal Register** (58 FR 33790). The notice announced the availability of additional data and information on changes in the EPA's modelling methodology being used in the development of the final NSPS and EG for MSW landfills. Public comments were requested on the new data and comment letters were received from seven commenters.

Since the Notice of Data Availability, the EPA has held several consultations with State, local, and industry representatives in accordance with the October 26, 1993 Executive Order 12875

on *Enhancing the Intergovernmental Partnership*.

Major concerns expressed by participants in the consultations were identified by the EPA. These concerns included: the design capacity exemption level, collection system design and monitoring flexibility, and timing of well placement. These concerns and others raised at proposal and clarified in the consultations were addressed by revising the rule as described in section VI of this preamble.

#### IV. Summary of the Standards, Emission Guidelines, and Methods

The affected facility under the NSPS is each new MSW landfill. MSW landfills are also subject to the requirements of RCRA (40 CFR 257 and 258). A new MSW landfill is a landfill for which construction, modification, or reconstruction commences on or after the proposal date of May 30, 1991 or that began accepting waste on or after that date.

The EG require control for certain existing MSW landfills. An existing MSW landfill is a landfill for which construction commenced prior to May 30, 1991. An existing MSW landfill may be active, i.e., currently accepting waste, or have additional capacity available to accept waste, or may be closed, i.e., no longer accepting waste nor having available capacity for future waste deposition. The designated facility under the EG is each existing MSW landfill that has accepted waste since November 8, 1987.

The final rules (both the NSPS and EG) require affected and designated MSW landfills having design capacities below 2.5 million Mg or 2.5 million cubic meters to file a design capacity report. Affected and designated MSW landfills having design capacities greater than or equal to 2.5 million Mg or 2.5 million cubic meters are subject to the additional provisions of the standards or EG.

The final standards and EG for MSW landfill emissions require the periodic calculation of the annual NMOC emission rate at each affected or designated facility with a maximum design capacity greater than or equal to 2.5 million Mg or 2.5 million cubic meters. Those that emit more than 50 Mg/yr are required to install controls.

The final rules provide a tier system for calculating whether the NMOC emission rate is less than or greater than 50 Mg/yr, using a first order decomposition rate equation. The tier system does not need to be used to model the emission rate if an owner or operator has or intends to install controls that would achieve compliance.

Chapter 1 of the promulgation BID (EPA 453/R-94-021) presents a complete discussion of the components of the tier system.

The BDT for both the NSPS and the EG requires the reduction of MSW landfill emissions from new and existing MSW landfills emitting 50 Mg/yr of NMOC or more with: (1) A well-designed and well-operated gas collection system and (2) a control device capable of reducing NMOC in the collected gas by 98 weight-percent.

A well-designed and well-operated collection system would, at a minimum: (1) Be capable of handling the maximum expected gas generation rate; (2) have a design capable of monitoring and adjusting the operation of the system; and (3) be able to collect gas effectively from all areas of the landfill that warrant control. Over time, new areas of the landfill will require control, so collection systems should be designed to allow expansion by the addition of further collection system components to collect gas, or separate collections systems will need to be installed as the new areas require control.

The BDT control device is a combustion device capable of reducing NMOC emissions by 98 weight-percent. While energy recovery is strongly recommended, the cost analysis is based on open flares because they are applicable to all affected and designated facilities regulated by the standards and EG. If an owner or operator uses an enclosed combustor, the device must demonstrate either 98-percent NMOC reduction or an outlet NMOC concentration of 20 ppmv or less. Alternatively, the collected gas may be treated for subsequent sale or use, provided that all emissions from any atmospheric vent from the treatment system are routed to a control device meeting either specification above.

The standards and EG require that three conditions be met prior to capping or removal of the collection and control system: (1) The landfill must be permanently closed under the requirements of 40 CFR 258.60; (2) the collection and control system must have been in continuous operation a minimum of 15 years; and (3) the annual NMOC emission rate routed to the control device must be less than the emission rate cutoff on three successive dates, between 90 and 180 days apart, based upon the site-specific landfill gas flow rate and average NMOC concentration.

Section VI.E. of this preamble describes a new section of the NSPS, § 60.753, "Operational Standards for Collection and Control Systems." The EG also refer to this section. The

provisions in this section include: (1) Collection of gas from each area, cell or group of cells in which non-asbestos degradable solid waste has been placed for a period of 5 years or more for active areas or 2 years or more for closed areas; (2) operation of the collection system with each wellhead under negative pressure, with a nitrogen level less than or equal to 20 percent (revised from 1 percent in the proposal, based on public comments) or an oxygen level less than or equal to 5 percent (a new provision); (3) operation with a landfill gas temperature less than 55 °C (a new provision) at each well transporting the collected gases to a treatment or control device designed and operated in compliance with § 60.752(b)(2)(iii) of the NSPS and operated at all times when the collected gas is vented to it; and (4) a requirement that the collection system be operated to limit the surface methane concentration to 500 ppm or less over the landfill as determined according to a specified monitoring pattern.

Owners and operators must determine compliance with the standards for the collection systems and control devices according to § 60.755. Changes made to the final compliance determination and monitoring procedures as a result of comments are discussed in detail in the BID (EPA 453/R-94-021). The §§ 60.757 and 60.758 of the NSPS and § 60.35(c) of the EG contain recordkeeping and reporting requirements. Changes have been made to the recordkeeping and reporting requirements to allow for

consistency with the final compliance requirements.

#### V. Impacts of the Standards and Emission Guidelines

##### A. Environmental Impacts of Promulgated Action

The estimated environmental impacts have changed somewhat from those presented in the preamble to the proposed regulations as a result of changes in the final rules and changes in the estimation methodology. These changes were made in response to public comments. Additional data were also incorporated and are described in the supplemental Notice of Data Availability (56 FR 33790). The analysis of environmental impacts presented in this document, along with the proposal and promulgation BID's, and memoranda in the docket constitute the Environmental Impact Statement for the final standards and guidelines.

For most NSPS, emission reductions and costs are expressed in annual terms. In the case of the NSPS and EG for landfills, the final regulations require controls at a given landfill only after the increasing NMOC emission rate reaches the level of the regulatory cutoff. The controls are applied when the emissions exceed the threshold, and they must remain in place until the emissions drop below the cutoff. However, this process could take as long as 50 to 100 hundred years for some landfills. During the control period, costs and emission reductions will vary from year to year. Therefore, the annualized numbers for any impact will change from year to

year. Because of the variability of emission reductions and costs of the final standards and EG over time, the EPA judged that the NPV of an impact is a more valuable tool in the decision process for landfills and has used NPV in the development of both the proposal and final nationwide impacts. The NPV is computed by discounting the capital and operating costs and emission reductions that will be incurred throughout the control periods to arrive at a measure of their current value. In this way, the NPV accounts for the unique emission patterns of landfills when evaluating nationwide costs and benefits over different discrete time periods for individual sources. Thus, the impacts presented include both annualized estimates and estimates expressed in terms of NPV in 1992.

##### 1. Air Emissions

The methodology for estimating the impacts of the NSPS and EG is discussed in the proposal BID and in memoranda in the docket. The analysis of impacts for the NSPS is based on new landfills (beginning construction after May 30, 1991) that are projected to begin accepting waste over the first 5 years of the standards. The NPV of the emission reduction achieved by the final standards is estimated to be 79,300 Mg, which reflects a 50 percent reduction from the NPV of the baseline emissions of 160,000 Mg. Substantial reduction of methane emissions is also achieved. Table 1 presents the emission reductions of the final NSPS in annualized values as well as NPV.

TABLE 1.—SUMMARY OF EMISSION REDUCTION AND COST IMPACTS FOR THE NSPS

|                                                    | NPV        | Annualized |
|----------------------------------------------------|------------|------------|
| Baseline NMOC Emissions <sup>a</sup> (Mg) .....    | 160,000    | 13,400     |
| NMOC Emission Reductions (Mg) .....                | 79,300     | 4,860      |
| % NMOC Emission Reduction .....                    | 50%        | 36%        |
| Baseline Methane Emissions <sup>a</sup> (Mg) ..... | 10,600,000 | 899,000    |
| Methane Emission Reduction <sup>b</sup> (Mg) ..... | 3,890,000  | 193,000    |
| % Methane Emission Reduction .....                 | 37%        | 21%        |
| Cost (Million \$) .....                            | 97         | 4          |

<sup>a</sup> In the absence of an NSPS. This does not include landfills closed prior to November 8, 1987.

<sup>b</sup> This does not include landfills expected to undertake profitable energy recovery.

For existing landfills, the NPV of the NMOC emission reduction achieved by the final EG is estimated to be 1.1 million Mg, or a 53 percent reduction from a baseline of 2.07 million Mg (NPV). The NPV of the methane reduction is estimated to be 47 million

Mg. Table 2 presents the emission reductions of the final EG in annualized values as well as NPV. Note that the baseline methane emissions do not include landfills closed prior to November 8, 1987, and that methane reductions shown in Tables 1 and 2 do

not include landfills expected to undertake profitable energy recovery. Total methane reductions are anticipated to be on the order of 7 million megagrams in the year 2000.

TABLE 2.—SUMMARY OF EMISSION REDUCTION AND COST IMPACTS FOR THE EMISSION GUIDELINES

|                                                    | NPV         | Annualized |
|----------------------------------------------------|-------------|------------|
| Baseline NMOC Emissions <sup>a</sup> (Mg) .....    | 2,070,000   | 145,000    |
| NMOC Emission Reductions (Mg) .....                | 1,100,000   | 77,600     |
| % NMOC Emission Reduction .....                    | 53%         | 54%        |
| Baseline Methane Emissions <sup>b</sup> (Mg) ..... | 120,000,000 | 8,440,000  |
| Methane Emission Reduction (Mg) .....              | 47,000,000  | 3,370,000  |
| % Methane Emission Reduction .....                 | 39%         | 40%        |
| Cost (Million \$) .....                            | 1,278       | 90         |

<sup>a</sup> In the absence of EG. This does not include landfills closed prior to November 8, 1987.

<sup>b</sup> This does not include landfills expected to undertake profitable energy recovery.

As existing landfills are filled, closed, and replaced by new landfills, the actual annual emissions reductions achieved by the guidelines will decrease, while the reductions achieved by the standards will increase.

Certain by-product emissions, such as NO<sub>x</sub>, CO, SO<sub>x</sub>, and particulates, may be generated by the combustion devices used to reduce air emissions from MSW landfills. The types and quantities of these by-product emissions vary depending on the control device. However, by-product emissions are very low compared to the achievable NMOC and methane emission reductions. Chapters 4 and 6 of the proposal BID (EPA-450/3-90-011a) present additional information about the magnitude of potential secondary air impacts.

## 2. Water

Landfill leachate is the primary potential source of water pollution from a landfill. Although there is no data on the effect of gas collection on leachate composition, the amount of water pollution present as NMOC in the leachate may be reduced under these standards and guidelines.

When LFG is collected, organics and water are condensed inside the header pipes of the gas collection system. This waste also contains NMOC and various toxic substances present in the LFG. The pH of this condensate is normally adjusted by adding caustic at the landfill and then routing it to a public treatment works where it would be treated and discharged. At this time, there is insufficient data available to quantify the effects of the rule on leachate.

## 3. Solid Waste

The final NSPS and EG will likely have little impact on the quantity of solid waste generated nationwide. Aside from the disposal of the collection and control system equipment once it can be removed from the landfill, no other solid wastes are expected to be generated by the required controls. The increased cost of landfill operation

resulting from the control requirements may cause greater use of waste recycling and other alternatives to landfill disposal, leading to a decrease in landfill use. However, quantification of such an impact is not possible at this time.

## 4. Superfund Sites

Municipal solid waste landfill sites comprise approximately 20 percent of the sites placed by the EPA on the national priorities list. Often, remedial actions selected at these sites include venting methane and volatile organic contaminants, which would be controlled as necessary to protect human health and the environment.

The final NSPS and EG may affect remedial actions under Superfund for MSW landfills. Section 121(d)(2) of CERCLA requires compliance with the substantive standards of applicable or relevant and appropriate requirements (ARAR) of certain provisions in other environmental laws when selecting and implementing on-site remedial actions. "Applicable" requirements specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Superfund site. "Relevant and appropriate" requirements are not legally applicable, but may address problems or situations sufficiently similar to those encountered so that their use is well suited to a particular site. See 40 CFR 300.5 (55 FR 8814, 8817, March 8, 1990).

These air emission rules will apply to new MSW landfills, as well as to those facilities that have accepted waste since November 8, 1987, or that have capacity available for future use. For CERCLA municipal landfill remediations, these requirements would be potential ARAR for all Records of Decision signed after the date of promulgation. These NSPS and EG will be applicable for those MSW landfill sites on the national priorities list that accepted waste on or after November 8, 1987, or that are operating and have capacity for future use. These standards may also be

determined relevant and appropriate for sites that accepted wastes prior to November 8, 1987. The determination of relevance and appropriateness is made on a site-specific basis pursuant to 40 CFR 300.400(g) (55 FR 8841, March 8, 1990). Because the NSPS and EG apply only to landfills with design capacities greater than or equal to 2.5 million Mg or 2.5 million cubic meters, the collection and control requirements may not be relevant and appropriate for smaller landfills.

Given the significant public policy benefits that result from the collection and processing of landfill gas, Congress, as part of the 1986 SARA Amendments, enacted CERCLA Section 124 to provide broad liability protection for companies engaged in landfill gas recovery or processing. Landfill gas emissions, in addition to being a significant source of air pollution, can leach underground and cause explosions in nearby residences. If recovered, landfill gas could supply as much as 1 percent of the U.S. energy requirements.

CERCLA Section 124 states that owners or operators of equipment installed "for the recovery or processing (including recirculation of condensate) of methane" shall not be liable as a CERCLA "owner or operator" under CERCLA Section 101 (20) nor shall they be deemed "to have arranged for disposal or treatment of any hazardous substance\* \* \*" pursuant to CERCLA Section 107. Exceptions are provided (1) where a release is primarily caused by activities of the landfill gas owner/operator or (2) where such owner/operator would be otherwise liable due to activities unrelated to methane recovery.

Since passage of CERCLA section 124, methane emissions have been targeted by the EPA as a large contributor to global warming (18 percent) and landfills are one of the largest source of methane emissions (36 percent). Because of this, the EPA's Atmospheric Pollution Prevention Division has initiated the Landfill Methane Outreach Program to promote landfill gas

collection projects at the 750 landfills where methane could profitably be recovered. Methane recovery, as compared with collection and flaring of landfill gas without recovery, results in significantly less emissions. It also can greatly reduce the financial burden on local governments (as well as taxpayers) since the energy recovered can be sold to utilities or other consumers and thereby create a revenue stream that may cover the costs of collection and recovery.

The EPA is aware that the standards and guidelines promulgated today for control of emissions at municipal solid waste landfills may change the focus of the landfill gas collection and processing for methane recovery. The landfill gas owner/operator will now need to consider how the collection and recovery of methane will impact on controlling the MSW landfill emissions. It is also likely that the landfill gas owner/operator will be asked to advise and in some cases help implement the MSW landfill's compliance obligations. These related objectives, the control of emissions at municipal solid waste landfills in order to comply with the Clean Air Act Amendments and the reduction of methane emissions in order to mitigate global warming, will need to be coordinated in carrying out common activities such as laying a system of collection piping at a given landfill.

In promulgating today's standards and guidelines, the EPA wants to promote the policy incorporated in CERCLA Section 124. Recognizing the chilling effect that potential CERCLA liability might otherwise have on landfill gas collection or processing activities, the EPA interprets CERCLA Section 124 in a manner that will encourage the beneficial recovery of methane. Specifically, EPA believes that Congress intended Section 124 to provide liability protection to owners and operators of equipment for the recovery or processing of methane with respect to all phases involved in landfill gas collection and methane processing. This includes any assistance (related to recovery or processing of methane) provided by the landfill gas equipment owner or operator to the landfill owner/operator for achieving compliance with the emission standards promulgated today or similar Federal, State, or local controls on landfill emissions. In general, Section 124 will be interpreted in a manner to provide owners and operators of equipment for the recovery or processing of methane with comprehensive protection from CERCLA liability, unless the release or threatened release was primarily caused by activities of the owners and operators

of the equipment, or unless such owners or operators would be otherwise liable under CERCLA.

### *B. Energy and Economic Impacts of Promulgated Action*

The energy and economic impacts are summarized in chapter 1 and fully discussed in chapter 3 and appendix A of the promulgation BID (EPA-453/R-94-021). The estimated impacts have changed somewhat as a result of changes in the final rules and changes in the impacts estimation methodology made in response to public comments.

#### 1. Energy Impacts

Affected and designated landfills with NMOC emission rates of 50 Mg/yr or more are required to install a gas collection system and control device. The gas collection system would require a relatively small amount of energy to run the blowers and the pumps. If a flare is used for control, auxiliary fuel should not be necessary because of the high heat content of LFG, commonly  $1.86 \times 10^7$  J/scm or more. If a recovery device such as an internal combustion (I.C.) engine or a gas turbine is used, an energy savings would result.

The EPA evaluated the overall energy impacts resulting from the use of flares, I.C. engines, or gas turbines for control of collected emissions at all affected landfills. The least cost control option was identified by taking the NPV costs of the three control options (flares, I.C. engines, and turbines), including any cost savings from the use of recovered landfill gas, and determining the option that costs the least. If landfills use the least cost control device, it is estimated that the NSPS will produce \$170 million of energy revenue as NPV in 1992. The EG are estimated to generate \$1.5 billion of energy revenue as NPV in 1992, if the least cost control device is used.

#### 2. Control Costs and Economic Impacts

Nationwide annualized costs for collection and control of air emissions from new MSW landfills are estimated to be \$4 million. The nationwide cost of the EG would be approximately \$90 million. These values are annualized costs. Tables 1 and 2 present costs in both annualized and NPV values. In comparison to other solid waste-related rules, the nationwide costs of the recently promulgated RCRA Subtitle D (40 CFR 257 and 258) rule are estimated to be \$300 million per year and the estimated nationwide costs of the MWC rules promulgated in 1991 are estimated to be \$170 million per year for new combustors and \$302 million per year

for existing combustors (56 FR 5488 and 5514).

The incremental costs and benefits of the different options are presented in tables 3, 4, 5, and 6 in section VIII.E. For NMOC, the average cost effectiveness is approximately \$1,200/Mg for both the NSPS and the EG. Preliminary economic analysis indicates that the annual cost of waste disposal may increase by an average of approximately \$0.60 per Mg for the NSPS and \$1.30 per Mg for the EG. Costs per household would increase approximately \$2.50 to \$5.00 per year, when the household is served by a new or existing landfill, respectively. Additionally, less than 10 percent of the households would face annual increases of \$15 or more per household as a result of the final EG. However, the EPA anticipates that many landfills will elect to use energy recovery systems, and costs per household for those areas would be less. The EPA has concluded that households would not incur severe economic impacts. For additional information, please refer to the regulatory impact analysis (Docket No. A-88-09, Item No. IV-A-7) and chapter 3 of the promulgation BID (EPA-453/R-94-021).

### **VI. Significant Changes to the Proposed Standards and Emission Guidelines**

All of the significant public comments received on the proposed standards and EG and the Notice of Data Availability are addressed in the promulgation BID (EPA-453/R-94-021). This section of the preamble reviews the major changes to the standards and EG resulting from public comments. A more detailed rationale for these changes is provided in chapters 1 and 2 of the promulgation BID (EPA-453/R-94-021).

#### *A. Design Capacity Exemption*

A design capacity exemption of 100,000 Mg was included in the proposed NSPS and EG to relieve owners and operators of small landfills that the EPA considered unlikely to emit NMOC above the emission rate cutoff requiring control from undue recordkeeping and reporting responsibilities. Commenters indicated that the exemption level was too low, and would still impact many small businesses and municipalities. In response to these comments and as a result of changes to the nationwide impacts analysis, the design capacity exemption in the final NSPS was revised to 2.5 million Mg. The 2.5 million Mg exemption level would exempt 90 percent of the existing landfills while only losing 15 percent of the total NMOC emission reduction. Most of the exempt landfills are owned

by municipalities. The 2.5 million Mg level was chosen to relieve as many small businesses and municipalities as possible from the regulatory requirements while still maintaining significant emission reduction.

This cutoff excludes those landfills who would be least able to afford the costs of a landfill gas collection and control system and are less likely to have successful energy recovery projects. However, depending on site-specific factors including landfill gas characteristics and local markets, some landfills smaller than the design capacity exemption level may be able to make a profit by installing collection and control systems that recover energy. While the rule does not require control of landfills smaller than 2.5 million Mg, the EPA encourages energy recovery in cases where it is profitable. The EPA has developed a Landfill Methane Outreach Program to encourage more widespread utilization of landfill gas as an energy source. Information can be obtained by calling the Landfill Methane Outreach Program Hotline at (202) 233-9042. Available publications are identified in section 1.2.1 of the promulgation BID.

Since some landfills record waste by volume and have their design capacities calculated in volume, the EPA also established an equivalent design capacity exemption of 2.5 million m<sup>3</sup> of waste. The density of solid waste within different landfills varies depending on several factors, including the compaction practices. Any landfill that reports waste by volume and wishes to establish a mass design capacity must document the basis for their density calculation.

#### *B. Emission Rate Cutoff*

Some commenters asserted that the proposed emission rate cutoff of 150 Mg/yr should be made more stringent, while others favored the proposal cutoff or higher. The commenters favoring the more stringent level indicated that the EPA's data on NMOC concentration, the benefits of energy recovery and reduced global warming, and the reduced health risks all supported an increased stringency level.

The Climate Change Action Plan, signed by the President in October, 1993, calls for EPA to promulgate a "tough" landfill gas rule as soon as possible. This initiative also supports a more stringent emission rate cutoff that will achieve greater emission reduction.

Due to the small-size exemption, only landfills with design capacities greater than 2.5 million Mg of waste or 2.5 million cubic meters of waste will be affected by this rule. It is estimated that a landfill of 2.5 million Mg design

capacity corresponds to cities greater than about 125,000 people. On the whole, large landfills service areas with large population. A reasonable assumption is that many of these large landfills are in the 400 counties that have been designated as urban ozone nonattainment areas and are developing plans to address ozone nonattainment.

Finally, the new data and modeling methodologies, which were published in the Notice of Data Availability on June 21, 1993, significantly reduced the emission reduction and corresponding effectiveness of the rule. Therefore, a more stringent emission rate cutoff would achieve similar emission reductions at similar cost effectiveness to the proposed rule.

Based on all of these reasons, the EPA reevaluated the stringency level and chose an emission rate cutoff of 50 Mg/yr of NMOC for the final rules. This revision would affect more landfills than the proposal value of 150 Mg/yr of NMOC; however, the 50 Mg/yr of NMOC will only affect less than 5 percent of all landfills and is estimated to reduce NMOC emissions by approximately 53 percent and methane emissions by 39 percent. The 150 Mg/yr emission rate cutoff would have reduced NMOC emissions by 45 percent and methane emissions by 24 percent. The incremental cost effectiveness of control of going from a 150 Mg/yr cutoff level to a 50 Mg/yr cutoff level is \$2,900/Mg NMOC reduction for new landfills and \$3,300/Mg for existing landfills.

The values for NMOC cost effectiveness do not include any credit for the benefits for toxics, odor, explosion control, or the indirect benefit of methane control. A revised cost effectiveness could be calculated with an assumed credit value for one or more of the other benefits. As an example, assuming a \$30/Mg credit for the methane emission reduction, the incremental cost effectiveness from the proposal cutoff of 150 Mg/yr to the final cutoff of 50 Mg/yr would be reduced to \$660/Mg NMOC.

#### *C. Collection System Design Specifications*

Commenters indicated that the proposed design specifications for the collection system were overly prescriptive, discouraged innovation, and did not prevent off-site migration of LFG. In the new § 60.759 for design specifications, certain criteria still require proper landfill gas collection; however, the proposed design specifications for the LFG collection system were removed from the final regulations. Instead, the final rule

allows sources to design their own collection systems. Design plans must meet certain requirements and be signed by a registered professional engineer, and are subject to agency approval. These changes were made to provide flexibility and encourage technological innovation.

#### *D. Timing for Well Placement*

The proposed regulations required the installation of collection wells at applicable landfills within 2 years of initial waste placement. Commenters indicated that the installation of wells within 2 years was not practiced at many landfills, because many cells were still active (receiving waste) 2 years after initial placement. Collection wells installed at these cells would have to be covered over, which would decrease the operational life of the well and be costly and inefficient.

The proposed timing for the placement of collection wells has been revised to reduce costs and better coincide with common operational practices at MSW landfills. The final regulation allows for well installation up to 5 years from initial waste placement for active cells. An area that reaches final grade or closure must install collection wells within 2 years of initial waste placement.

#### *E. Operational Standards*

In response to commenters concerns about the operation of collection systems, the final NSPS contains a new section, § 60.753, "Operational Standards for Collection and Control Equipment." Various operational provisions that had previously been located throughout the proposed rule have been organized under this one section, and new provisions on collection and control systems have been added. The new section addresses the following areas: (1) Collection of gas from active areas containing solid waste older than 5 years (changed from 2 years at proposal); (2) operation of the collection system with negative pressure at each wellhead (except as noted in the rule); (3) operation of the collection system with a landfill temperature less than 55° (or a higher established temperature) and either an N<sub>2</sub> level less than or equal to 20 percent or an O<sub>2</sub> level less than or equal to 5 percent; (4) operation of the collection system with a surface concentration less than 500 ppm methane; (5) venting all collected gases to a treatment or control device; and (6) operation of the treatment or control device at all times when the collected gas is routed to the control device. The numerical requirements (for the N<sub>2</sub> or O<sub>2</sub> levels, landfill temperature,



and surface concentration) are new requirements that will verify that the system is being adequately operated and maintained. In conjunction with the new operational provisions, the compliance, testing and monitoring sections were revised to reference and support these new or relocated provisions.

#### *F. Surface Emission Monitoring*

Numerous commenters asserted that the proposed rules did not address surface methane emissions resulting from insufficient well spacing or from breaks in the cover material. The commenters recommended that monitoring of surface emissions be required to ensure the proper operation of collection system equipment. Upon further analysis, the EPA decided to require surface emission monitoring and the maintenance of negative pressure at all wells, except under specified conditions, to ensure proper collection system design and operation. Based on information submitted by commenters, a maximum surface concentration of 500 ppm methane should be demonstrated to indicate proper operation of the collection system. Monitoring is to be done quarterly, with provisions for increasing monitoring and corrective procedures if readings above 500 ppm are detected. Instrumentation specifications, monitoring frequencies, and monitoring patterns have been structured to provide clear and straightforward procedures that are the minimum necessary to assure compliance.

#### *G. Model Default Values*

The EPA received additional data after proposal on the model defaults that were included in the tier system calculations. These default values are used to calculate whether the NMOC concentration is above the cutoff level for control requirements of 50 Mg/yr. The new information received lead the EPA to revise the default values for the site-specific methane generation rate constant ( $k$ ), the methane generation potential ( $L_0$ ), and the NMOC concentration ( $C_{NMOC}$ ). In the absence of site-specific data, the landfill owner or operator would use the default values for  $k$ ,  $L_0$ , and  $C_{NMOC}$  in order to estimate the annual NMOC emission rate. More information on the model defaults may be found in the final BID (EPA-453/R-94-021) and the memorandum "Documentation of Small-Size Exemption Cutoff Level and Tier 1 Default Values (Revised)," October 21, 1993, (Docket No. A-88-09, Item No. IV-B-5).

The Tier 1 default values of  $k$ ,  $L_0$ , and  $C_{NMOC}$  tend to overstate NMOC emission rates for most landfills, and are intended to be used to indicate the need to install a collection and control system or perform a more detailed Tier 2 analysis. It is recommended that these default values not be used for estimating landfill emissions for purposes other than the NSPS and EG. The EPA document "Compilation of Air Pollution Emission Factors" (AP-42) provides emission estimation procedures and default values that can be used for emissions inventories and other purposes.

### **VII. Permitting**

#### *A. New Source Review Permits*

Today's rulemaking under section 111(h) establishes a new classification of pollutants subject to regulation under the CAA: "MSW landfill emissions." Therefore, PSD rules now apply to all subject stationary sources which have increases in landfill gas above the significance level, 50 tpy or more of NMOC. Landfills below the 2.5 million Mg design capacity exemption, which are not required by the regulations to install controls, may exceed this significance level. In this case, the State will need to determine if controls should be installed for purposes of PSD or NSR compliance.

The proposed significance level for MSW landfill emissions of 40 tpy of NMOC was changed to 50 tpy after consideration of public comments. The PSD significance level for VOC emissions is 40 tpy. At proposal, the landfill gas emission level was set at 40 tpy of NMOC to be consistent with the 40 tpy level for VOC. However, NMOC contains organic compounds that are not VOC. An NMOC emission rate of roughly 50 tpy corresponds to a VOC emission rate of 40 tpy.

The components of MSW landfill emissions that are regulated as pollutants or precursors of an air pollutant listed under section 108 of the CAA are also regulated by other provisions of CAA as applicable. For example, the components of MSW landfill emissions that are emitted as photochemically reactive VOCs are regulated, as applicable, under the nonattainment provisions for ozone contained in part D of title I of the CAA.

#### *B. Operating Permits*

Section 502 of the CAA and § 70.3(a) require any source subject to standards or regulations under section 111 of the CAA to obtain part 70 operating permits. However, landfills below 2.5 million Mg design capacity are not

subject to standards under section 111 because they are not required to put on controls and are not subject to emission limits. These landfills are subject to a reporting requirement under the section 111 rule; however, this requirement determines applicability of the standard and does not make them "subject" for the purposes of part 70. Consequently, landfills below 2.5 million Mg design capacity are not subject to part 70, provided they are not major sources; and this is stated in § 60.752(a) of the rule. If landfills below 2.5 million Mg design capacity are major sources, they must obtain a part 70 permit under the same deadlines and requirements that apply to any other major source. States may request additional information to verify whether landfills have the potential to emit at major source levels.

For landfills above the 2.5 million Mg design capacity exemption, part 70 operating permits are required. These landfills are subject to emission limits and will most often be major sources. Since landfill emissions increase over time, a landfill over 2.5 million Mg may not be major in the beginning; however, as the landfill progresses to capacity, it may become major. Many of the landfills above the 2.5 million Mg exemption will be required to collect and control the gas under the regulation. The issuance of a permit will also help enforce and implement the standard. Therefore, the EPA has decided to require permits for all landfills with design capacities above 2.5 million Mg, whether or not the landfill will be required to install a collection and control system.

The regulation also provides for termination of operating permits. Landfill emissions, unlike emissions from other source categories, decrease over time after the landfill is closed. If a landfill has closed and a control system was never required or the conditions for control system removal specified in the regulation have been met, an operating permit is no longer necessary.

### **VIII. Administrative Requirements**

#### *A. Docket*

The docket (Docket No. A-88-09) is an organized and complete file of all the information considered by the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with

## Attachment E

U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills;  
**Proposed Rule, 79 Fed. Reg. 41,796 (July 17, 2014)** (excerpts)



**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2003-0215; FRL-9912-12-OAR]

RIN 2060-AM08

**Standards of Performance for Municipal Solid Waste Landfills**

**AGENCY:** Environmental Protection Agency.

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing a new subpart, 40 CFR part 60, subpart XXX that updates the Standards of Performance for Municipal Solid Waste Landfills. Under section 111 of the Clean Air Act, the EPA must review, and, if appropriate, revise standards of performance at least every 8 years. The EPA's review of the standards for municipal solid waste landfills applies to landfills that commence construction, reconstruction, or modification after July 17, 2014. The proposed standards reflect changes to the population of landfills and an analysis of the timing and methods for reducing emissions. The proposed standards also address other regulatory issues including the definition of landfill gas treatment systems, among other topics. The new subpart will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. These avoided emissions will improve air quality and reduce public health and welfare effects associated with exposure to landfill gas emissions.

**DATES:** *Comments.* Comments must be received on or before September 15, 2014.

*Public Hearing.* If anyone contacts the EPA requesting a public hearing by July 22, 2014, we will hold a public hearing on August 12, 2014, in Washington, DC at the William Jefferson Clinton East Building, Room 1153, 1201 Constitution Avenue NW., Washington, DC 20004. The public hearing will convene at 9:00 a.m. and end at 6:00 p.m. (Eastern Standard Time). There will be a lunch break from 12:00 p.m. to 1:00 p.m. Please contact Ms. Virginia Hunt at (919) 541-0832 or at [hunt.virginia@epa.gov](mailto:hunt.virginia@epa.gov) to register to speak at one of the hearings. The last day to pre-register in advance to speak at the hearings will be Friday August 8, 2014. Additionally, requests to speak will be taken the day of the hearing at the hearing registration desk, although preferences on speaking times may not be able to be fulfilled. If you require the service of a translator or

special accommodations such as audio description, please let us know at the time of registration.

If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by July 22, 2014, a public hearing will not take place. If a hearing is held, it will provide interested parties the opportunity to present data, views or arguments concerning the proposed action. The EPA will make every effort to accommodate all speakers who arrive and register. Because this hearing, if held, will be at U.S. government facilities, individuals planning to attend the hearing should be prepared to show valid picture identification to the security staff in order to gain access to the meeting room. In addition, you will need to obtain a property pass for any personal belongings you bring with you. Upon leaving the building, you will be required to return this property pass to the security desk. No large signs will be allowed in the building, cameras may only be used outside of the building and demonstrations will not be allowed on federal property for security reasons.

The EPA may ask clarifying questions during the oral presentations, but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. Commenters should notify Ms. Hunt if they will need specific equipment, or if there are other special needs related to providing comments at the hearings. Verbatim transcripts of the hearing and written statements will be included in the docket for the rulemaking. The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearing to run either ahead of schedule or behind schedule. Information regarding the hearing (including information as to whether or not one will be held) will be available at: <http://www.epa.gov/ttnatw01/landfill/landflpg.html>.

**ADDRESSES:** Submit your comments, identified by Docket ID Number EPA-HQ-OAR-2003-0215, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments.

- *Email:* [A-and-R-docket@epa.gov](mailto:A-and-R-docket@epa.gov). Include docket ID No. EPA-HQ-OAR-2003-0215 in the subject line of the message.

- *Fax:* (202) 566-9744. Attention Docket ID No. EPA-HQ-OAR-2003-0215.

- *Mail:* Environmental Protection Agency, EPA Docket Center (EPA/DC), Mailcode 28221T, Attention Docket ID No. EPA-HQ-OAR-2003-0215, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.

- *Hand/Courier Delivery:* EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue NW., Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

*Instructions:* Direct your comments to Docket ID No. EPA-HQ-OAR-2003-0215. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute.

Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. Send or deliver information identified as CBI to only the mail or hand/courier delivery address listed above, attention: Mr. Roberto Morales, OAQPS Document Control Officer (Room C404-02), Office of Air Quality Planning and Standards, U.S. EPA, Research Triangle Park, NC 27711, Attention Docket ID No. EPA-HQ-OAR-2003-0215. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact

emission thresholds but do not meet the design capacity thresholds. Further, installation of GCCS at landfills with design capacities between 2.5 and 3.0 million Mg are well demonstrated. According to the LMOP database, there are more than 50 landfills out of 70 in this size range that have installed GCCS.

Options that reduce the design capacity threshold without also lowering the NMOC emission threshold would create additional reporting and permitting burden without any additional environmental benefit. These types of options would not change the number of landfills required to control emissions, but they would increase the number of landfills required to obtain an operating permit and also increase the number of landfills required to complete Tier 1 or Tier 2 emission calculations and reports.

When the EPA promulgated the 2.5 million Mg design capacity threshold in 1996, we considered the impact on small entities based on public comment (61 FR 9910). Today, small entities still tend to own smaller sized landfills, whereas larger entities tend to own larger regional landfills. Approximately 10 percent of the landfills subject to subpart WWW or the MSW landfills state or federal plan implementing subpart Cc are owned by small entities. Further, the cost burden for installing a collection and control system is more significant for small landfills, which are more often owned by small entities, than larger landfills. Certain costs to construct the gas collection system (e.g., flat fees for drill rig mobilization, and monitoring and construction costs) remain relatively constant regardless of the size of the landfill.

For these reasons, the EPA is not proposing any changes to the current design capacity threshold of 2.5 million Mg and 2.5 million m<sup>3</sup>.

#### *E. What are the implementation concerns with reducing the NMOC threshold?*

The EPA recognizes that NMOC emissions are site specific, varying widely from landfill to landfill and understands that a majority of landfills currently affected by subpart WWW conduct Tier 2 testing in order to refine their NMOC emission estimates before installing a GCCS.

Lowering the NMOC emission threshold would result in earlier GCCS installations, 13 percent more emission reductions, and a dollar-per-Mg cost to control NMOC that is higher than the baseline (\$6,000/Mg NMOC vs. \$4,400/Mg NMOC). Despite these higher costs, the EPA also recognizes the value of reducing methane emissions (\$1.50/Mg

CO<sub>2</sub>e vs. \$1.10/Mg CO<sub>2</sub>e at baseline) that are associated with a lower NMOC emission threshold, as discussed in sections III and VI.B of this preamble. Based on these considerations, among others, the EPA is proposing to reduce the NMOC emission threshold from 50 Mg/yr to 40 Mg/yr. See section VI.B of this preamble for more details.

#### *F. What are the implementation concerns with shortening the initial or expansion lag times?*

The emission reductions achieved by reducing the initial or expansion lag time are affected by the size of the landfill, waste placement patterns, and annual acceptance rates. For example, the size of the landfill and the filling cycle affects how much and when emission reductions would be achieved. Based on comments received from SERs and Federalism consultation participants, modern landfill designs typically do not reach final grade before 7 years. Because the landfills NSPS allows two options for expanding the GCCS (2 years after initial waste placement in closed areas and 5 years after initial waste placement in active areas), any reduction to the 2 year lag time for closed areas would not likely achieve any actual additional reductions from these larger landfills because the majority of landfills are complying with the 5-year allowance period instead of the 2-year allowance period. Modifying the 5-year provision may also have a limited actual impact on emission reductions. Many landfills in wet climates install wells ahead of the 5-year schedule for odor or energy recovery purposes. When examining the effects of shortening the lag times, the emission reductions vary over the time period considered. To visually observe how reducing the lag times affects emissions and reductions over the 10-year period following proposal, see the charts comparing emissions from reduced lag times in the docketed memorandum, "Cost and Emissions Impacts Resulting from the Landfills NSPS Review. 2014."

When isolating the timeframe for initial GCCS installation from the other control criteria, modeling showed that the reductions in year 2023 are lower than those estimated to be achieved under the current baseline. Although the initial GCCS would be installed earlier, for example in year 2020, it would also be designed slightly smaller (i.e., a smaller number of wells) than a GCCS installed in a later year. By 2023, the system would not have been expanded yet, thus, the total amount of emission reductions achieved in 2023

will be less than the baseline until the system is expanded in 2024.

Reducing the expansion lag time would achieve a short period of modeled reductions during every expansion cycle because the GCCS would be expanded one year earlier. Emission reductions in year 2023 would be approximately 27 percent higher than an option that did not shorten the expansion lag time. However, when considered over a 10-year period, the additional emission reduction would be approximately 8 percent.

Small entity representatives and Federalism consultation participants expressed concern about the potential shortening of lag times. For details, refer to the docketed report "Summary of Small Entity Outreach. 2014."

According to the commenters, reduced lag times would result in the installation of more GCCS equipment in active fill areas. Wells located in these areas are more frequently damaged as a result of daily filling operations and the movement of equipment. Damaged wells must be repaired with well extensions and/or redrilling of wells. In addition, waste in active fill areas undergoes significant settlement. This settlement affects the alignment of gas header equipment, requiring more frequent repairs, troubleshooting, and replacement of equipment. These repairs can add a significant cost to the construction and operation of a GCCS that is not currently accounted for in the LFGcost estimates and also increase the amount of system downtime.

In addition to the implementation concerns, reducing the lag times would require more frequent mobilization of drill rig equipment, purchase of GCCS infrastructure, and system repairs, which could lead to higher costs. In year 2023, the dollar-per-Mg cost to reduce the initial and/or expansion lag times in conjunction with reducing the NMOC threshold are higher than the options that do not adjust the lag times (\$6,900 to \$11,300/Mg NMOC vs. \$6,000/Mg NMOC). This higher cost is due in part to the timing of the first round of wellfield expansions at these new landfills, many of which were modeled to expand their systems in 2023, and thus incurring additional costs in that year to operate both the initial GCCS and the first set of expansion wells.

Small entity representatives and Federalism consultation participants raised several practical concerns with reducing the expansion lag time. Reducing the expansion lag time would result in more wells located in active fill areas because more of the face of the landfill is active after only 2 years of waste acceptance and the landfill owner

or operator must add wells into these active areas sooner.

In addition, active fill areas are still in the aerobic phase of waste decomposition. Installing wells in areas with high oxygen levels increases the chance of subsurface fires. It also leads to more frequent exceedances of the current wellhead monitoring standards for oxygen. In these cases the landfill owner or operator would also be unlikely to request a higher operating value for oxygen because they would have difficulty meeting the two criteria in proposed 40 CFR 60.763(c) for a higher operating value demonstration: A higher operating value must not cause fires and must not significantly inhibit anaerobic decomposition by killing methanogens. Neither of these criteria would apply to wells located in active fill areas.

Horizontal LFG collection wells may provide some relief to these implementation concerns that were raised by the SERs, while also allowing for the wells to be installed more quickly after the waste is placed in the landfill. These types of wells consist of perforated pipe in gravel-filled trenches constructed within the waste mass as an active area is filled. The wellheads are installed remotely outside of the active fill area to allow landfill owners/operators to monitor the wells. Although the horizontal collection infrastructure is installed as the waste is placed in the fill area, the collectors are not brought online under an active vacuum until a sufficient refuse layer has been placed on top of the collectors. This time period is necessary in order to prevent air infiltration in the landfill. However, this time period is often shorter than the timeframe needed to install vertical wells, and can be as short as a few months after refuse is buried.<sup>20</sup>

The EPA is aware of several horizontal collector installations, including several landfills in California<sup>21</sup> and 18 different landfills that reported using horizontal collectors in the voluntary data collection effort for this rulemaking (see “Summary of Landfill Dataset Used in the Cost and Emission Reduction Analysis of Landfills Regulations, 2014”).

The shorter length of time associated with bringing horizontal collectors online can be especially important at landfills employing liquids recirculation

techniques or located in wetter climates, given the higher LFG generation rates at those sites (see section V.G of this preamble). Bringing these collectors online more quickly and more proactively addresses odor concerns at landfills. These systems are also useful in landfills that practice “over-filling,” where new waste is placed on top of a section of the landfill that was capped temporarily. SERs did express some implementation concerns with horizontal collectors, indicating that these systems have a shorter lifetime than vertical wells and require more frequent replacement.

For the reasons presented in this section, the EPA is not proposing to shorten the initial or expansion lag times from the lag times codified in subpart WWW. However, the EPA requests comment on the feasibility and potential benefits of reducing either or both of the lag times. Specifically, the EPA requests comment on the practicality, cost, and emission reduction implications of installing or expanding the wellfield on active areas in a shorter timeframe. The EPA believes that this may be appropriate since horizontal collector systems have been installed at several landfills that were not in operation when the NSPS was originally promulgated in 1996. The EPA also requests data and/or comment on the potential emission reductions and corresponding costs that could result from reduced lag times. The EPA also notes that the cost analysis presented in section X of this preamble is based on vertical wells and the EPA is interested in any comments and data that address any differential in costs between these two types of systems.

#### *G. Request for Comment on BSER*

The EPA is requesting comment on several items regarding BSER. EPA is requesting comment on the proposed design and operational standards for new sources that EPA believes are necessary to ensure a GCCS is well designed and well operated. The EPA is requesting comment on additional emission control technologies that are in place at landfills—other than a GCCS as described here—that could be considered BSER. We request descriptions of such systems, an indication of their current use, data demonstrating emission reductions, and corresponding costs of such systems. The EPA is also requesting comment on whether a well designed and well operated GCCS in conjunction with any of the technologies or practices discussed in section V.A of this preamble should be considered to be BSER.

The EPA is also taking comment on whether it should consider reducing the design capacity threshold or initial lag times for landfills that are located in a wet climate or that recirculate leachate or add other liquids to the landfills to accelerate waste decomposition. Wetter wastes decompose more quickly than drier wastes and as a result generate more landfill gas in the short term. Therefore, it may be appropriate to require these landfills to install the gas collection system sooner, which SERs indicated is already occurring in practice for landfills in wetter climates. Similarly, smaller landfills in wetter climates, or those employing leachate recirculation, may also generate earlier spikes in landfill gas emissions that could exceed the NMOC threshold. Although these landfills are exempt from proposed subpart XXX under the design capacity threshold of 2.5 million Mg and 2.5 million cubic meters, if a smaller design capacity threshold were adopted for these wet landfills, more emission reductions may be achieved.

If a separate set of thresholds and/or lag times were to apply to these wet landfills, the EPA requests comment on how a wet landfill might be defined. For example, a wet landfill could be defined as a landfill that has precipitation of greater than 25 inches per year and/or recirculates leachate (or other liquids).

#### **VI. Rationale for the Proposed Changes Based on Review of the NSPS**

To determine which option to propose, the EPA considered the emission reductions that are expected to be achieved under the criteria in the baseline (subpart WWW), as well as emission reductions that would be achieved under several control options more stringent than the baseline.

##### *A. What are the environmental impacts and costs associated with the baseline?*

In this analysis, the baseline contains the same gas collection and control requirements and thresholds (2.5 million Mg or 2.5 million cubic meters and 50 Mg NMOC per year) that are in subpart WWW. For the baseline, the initial lag time is 30 months; and the expansion lag time is 2 years after initial waste placement in cells that are closed or at final grade or 5 years after initial waste placement in active areas of the landfill. These parameters are described in detail in section V of this preamble.

Table 2 of this preamble summarizes the impacts of the baseline for year 2023. The table includes emission reductions for NMOC, methane, and carbon dioxide equivalent (CO<sub>2</sub>e) and corresponding annualized net costs based on the annualized control, testing,

<sup>20</sup> Barlaz et al., Controls on Landfill Gas Collection Efficiency: Instantaneous and Lifetime Performance 59 J. Air & Waste Mgmt. Ass’n 1399, 1402–03 (Dec. 2009).

<sup>21</sup> SCS Engineers, Technology and Management Options for Reducing Greenhouse Gas Emissions. Prepared for California Integrated Waste Management Board.

meet the design capacity thresholds and application of GCCS at landfills with design capacities between 2.5 and 3.0 million Mg is well demonstrated), alternative option 3.0/40 is also not being proposed.

*Proposed option 2.5/40.* Based on the emission reduction and cost discussions above and consistent with the President's Methane Strategy as discussed in section III of this preamble, the EPA is proposing to reduce the NMOC threshold to 40 Mg/yr. Lowering the NMOC threshold would result in earlier GCCS installations and additional NMOC and methane reductions compared to the baseline, as shown in Table 3 of this preamble. This lowered threshold achieves reductions without adjusting the initial and expansion lag times and incurring the associated costs and implementation concerns.

Reducing the NMOC threshold from the baseline-level of 50 Mg/yr to 40 Mg/yr would affect only three more landfills in 2023 but would achieve an estimated 13 percent additional reduction in emissions of NMOC and methane compared to the baseline. Further, this proposal would maintain the same control device removal criteria as the baseline except that the controls would have to stay on until three successive tests for NMOC emissions were below the NMOC emission threshold of 40 Mg/yr instead of 50 Mg/yr. Depending on the waste-in-place of the landfill at closure and other site-specific factors (e.g., waste composition, climate), it may take more than 30 years after closure for a large modern landfill to emit less than the NMOC emission threshold, and in turn qualify for capping or removing the GCCS. Although the emission reductions associated with these later years in the landfills' lifetimes are not incorporated in the environmental and economic impacts of the baseline and options under consideration, the lower threshold associated with this proposal would require controls to be installed for a slightly longer period than the baseline.

Although some commenters have expressed concerns about the quantity of emissions after landfills have closed and the GCCS has ceased to operate, the analysis the EPA conducted demonstrates that GCCS would be installed for a significant period after landfill closure that is commensurate with the size and corresponding emissions profile of each affected landfill. For these reasons, the EPA is proposing that emissions must be below an emissions threshold of 40 Mg/yr as one of the three criteria for determining

when a GCCS may be capped or removed. The EPA is also requesting comment on whether these three criteria are appropriate, and if alternative criteria such as consecutive quarterly measurements below a surface emission threshold should also be considered. RCRA, specifically subpart F of Part 258, also requires supplemental basic post-closure care to maintain cover integrity.

Reducing the NMOC threshold also recognizes the opportunity to build upon progress to date and achieve even more reductions of landfill gas and its components, consistent with the President's Methane Strategy as discussed in section III of this preamble. Landfill gas generated from established waste (waste that has been in place for at least a year) is typically composed of roughly 50 percent methane and 50 percent carbon dioxide by volume, with less than 1 percent NMOC. Because the components of landfill gas are associated with substantial health, welfare, and climate effects, additional reductions of landfill gas would improve air quality and reduce health and welfare effects associated with exposure to landfill gas emissions. Note that in 2012, landfills continued to be the third largest source of human-related methane emissions in the United States, representing 18.1 percent of total methane emissions.<sup>24</sup> Methane emissions represent 8.7 percent of all GHG emissions (in CO<sub>2</sub>e) in the United States.

*Alternative option 2.0/34.* Consistent with the President's Methane Strategy and the potential to achieve a near-term beneficial impact in mitigating global climate change (see section III of this preamble), the EPA considered even more stringent alternatives in its analysis of control options that may achieve additional reductions of methane and NMOC. For example, reducing the NMOC threshold below 40 Mg/yr in conjunction with reducing the design capacity to below 2.5 million Mg or 2.5 million cubic meters, an alternative option 2.0/34 would require controls at 11 landfills by 2023, which is the same number of landfills required to control under this proposal. However, under this more stringent option, four of the 11 landfills would install controls one year earlier. The extent of the emission reductions for this option depends on the time period considered. For example, in year 2023, emission reductions would not be any greater than the proposal. However, when averaged over the 10-year period (2014–2023), this more stringent option would achieve additional NMOC and methane reductions compared with the proposal.

Refer to the Environmental Impacts Analysis,<sup>25</sup> and the docketed memoranda "Cost and Emissions Impacts Resulting from the Landfills NSPS Review, 2014" for details on the estimated reductions. Additional emission reductions would be expected to be achieved over the lifetime of the landfills subject to subpart XXX because the lower NMOC threshold would require earlier installation of controls and also require the controls to remain installed for a longer period. The annualized cost to implement alternative option 2.0/34 would be higher than the proposal. The EPA did not analyze an option that reduced the NMOC threshold below 40 Mg/year without also reducing the design capacity threshold. In light of these additional reductions, as well as the additional costs to affected entities, the EPA is soliciting comment on whether an NMOC threshold below 40 Mg/yr in conjunction with a reduced design capacity threshold should be considered for new landfills subject to subpart XXX.

## VII. Summary of Clarifications and Resolutions That Are the Result of Implementation Activity

The EPA proposed amendments to the landfills NSPS (40 CFR part 60, subpart WWW) on May 23, 2002 (67 FR 36475) to address implementation issues. Consideration of public comments received and additional implementation activity led to the proposal of further clarifications on implementing the landfills regulations on September 8, 2006. After considering public comments received on the September 8, 2006 amendments and additional implementation activity, we are proposing resolutions and clarifications of the issues specifically identified below under new subpart XXX. The EPA plans to address amendments and clarifications resulting from implementation activities as they apply to subparts Cc and WWW in a separate document. The EPA will also address any potential changes to subparts Cc and WWW in a separate document. Thus EPA is not taking final action on either the May 23, 2002 or the September 8, 2006 proposed rules at this time. In addition to the specifically identified resolutions and clarifications associated with the May 23, 2002 and September 8, 2006 proposed rules, we are proposing a number of provisions in subpart XXX that are intended to address other implementation issues

<sup>25</sup> Municipal Solid Waste Landfills, Economic Impact Analysis for the Proposed New Subpart to the New Source Performance Standards.

#### *H. Submitting Corrective Action Timeline Requests*

During implementation of subpart WWW, the question has been raised about whether a landfill needs agency approval of corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for installing a GCCS. The intent of the rule is to require agency approval of corrective action timelines only if a landfill does not fix an exceedance in 15 days and is unable to or does not plan to expand the gas collection system within 120 days. We have included provisions in subpart XXX (40 CFR 60.765(a)(5)) to clarify this point. Excluding system expansion, all other types of corrective actions expected to exceed 15 calendar days should be submitted to the agency for approval of an alternate timeline. In addition, if a landfill owner or operator expects the system expansion to exceed the 120-day allowance period, it should submit a request and justification for an alternative timeline. We have not proposed a specific schedule for submitting these requests for alternative corrective action timelines because investigating and determining the appropriate corrective action, as well as the schedule for implementing the corrective action, will be site specific and depend on the reason for the exceedance. We clarify that a landfill should submit an alternative time line request as soon as possible (i.e., as soon as they know that they would not be able to correct the exceedance in 15 days or expand the system in 120 days) to avoid being in violation of the rule. If the landfill waits until 120 days after the exceedance to submit an alternative time line, then by the time the regulatory agency has the chance to review the time line and determine if it is approvable, the landfill will already be in violation of the requirement to expand the system within 120 days. After submitting the alternative timeline request, the landfill should work with its permitting authority to communicate the reasons for the exceedances, status of the investigation, and schedule for corrective action.

To address implementation concerns associated with the time allowed for corrective action, the EPA requests comment on an alternative that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days. Many requests for an alternative compliance timeline express the need for additional time to make necessary repairs to a well that requires significant construction activities. Extending the time period to as soon as practicable, but no later than 60 days

may reduce the burden and ensure sufficient time for correction. If the EPA were to extend the time period to as soon as practicable, but no later than 60 days, then the EPA is also considering the removal of the provision to submit an alternative timeline for correcting the exceedance. Thus, by no later than day 60, the landfill would have to either have completed the adjustments and repairs necessary to correct the exceedance, or be prepared to have the system expansion completed by day 120. The EPA is also requesting input on whether 60 days is the appropriate amount of time that would allow owners or operators to make the necessary repairs.

#### *I. Other Corrections and Clarifications*

The clarifications and provisions described in this section apply to new subpart XXX. During implementation of subpart WWW, the EPA learned about potential confusion in the rule caused by the terms “control and treatment system” and “control system.” It was requested that the EPA revise the term “control or treatment system” to read “control system.” We agree that the term treatment system is a subset of the control system as described in subpart WWW (40 CFR 60.752(b)(2)(iii)(C)) and are proposing to make this change in proposed subpart XXX. While making this change, we also conducted an extensive review of the remainder of the rule text to make several editorial and consistency changes to how the terms “control system” and “collection and control system” were used. As part of this review, we clarified our intent for the terms “device” and “equipment” to be used interchangeably with “system” in the context of the landfills NSPS; and we are proposing to replace these terms with “system” in several places, as appropriate, for consistency. We also identified editorial inconsistencies in the use of how the terms “control system” and “collection and control system” were referenced and we are proposing in subpart XXX to change the text to reference the correct term, consistent with the intent of the rule text.

We propose to include language in subpart XXX to exempt owners or operators of boilers and process heaters with design capacities of 44 megawatts or greater from the requirement to conduct an initial performance test. Available data demonstrate that boilers and process heaters with heat input capacities of 44 megawatts or greater consistently achieve the required level of control, and the exemption of these boilers from testing has been included in several other air regulations, such as

those for the chemical industry and petroleum refineries.

We propose to apply new language in subpart XXX (40 CFR 60.768(b)(2)(i) and 40 CFR 60.768(c)(1)(i)) by removing the term “combustion” from the requirement to monitor temperature of enclosed combustors. The amendment clarifies that the “combustion” temperature does not have to be monitored, because, for some enclosed combustors, it is not possible to monitor temperature inside the combustion chamber to determine combustion temperature. Instead, temperature can be monitored at another location, as long as the monitored temperature relates to proper operation of the enclosed combustor.

We propose to include a corrected test method cross-reference in subpart XXX (40 CFR 60.765(c)(3)) necessitated by the reorganization of Method 21 in appendix A to 40 CFR part 60.

We propose to include definitions of “household waste” and “segregated yard waste” in subpart XXX (40 CFR 60.761) to clarify our intent regarding the applicability of subpart XXX to landfills that do not accept household waste, but accept segregated yard waste. We intend for subpart XXX to apply to municipal solid waste landfills that accept general household waste (including garbage, trash, sanitary waste), as indicated in the definitions. We did not intend these rules to apply to landfills that accept only segregated yard waste and non-household waste such as construction and demolition and yard waste.

We are clarifying the definition of “Modification” in subpart XXX to include an increase in the permitted design capacity in terms of not only the volume, but also the mass.

The EPA is exploring options to achieve additional emissions reductions from existing landfills under CAA section 111(d) in an ANPRM. The EPA will consider all of the information it receives in response to the ANPRM in the context of its review of the NSPS and will respond to that information accordingly. In light of our interest in valuing methane reductions in our review of these standards as well as the number of cost-effective measures for existing landfills described in the ANPRM, the EPA is also exploring whether it is reasonable to review the definition of modification for landfills. A revision to the definition may provide additional opportunities to apply cost-effective measures to mitigate landfill gas emissions in modified sources because of the close relationship of control strategies that may apply to both modified landfills and existing sources.

The EPA requests comment on changes that may be appropriate and whether these changes should be enacted to achieve additional emissions reductions.

#### IX. Request for Comment on Specific Provisions

The EPA is specifically requesting public comment on three issues: Landfill gas treatment, wellhead monitoring, and enhanced surface monitoring.

##### *A. Definitions for Treated Landfill Gas and Treatment System and Treatment System Monitoring*

The EPA is requesting public comment on an alternative approach for defining treatment system and treated landfill gas. The alternative approach would define *Treated landfill gas* as landfill gas processed in a treatment system according to subpart XXX and would define *Treatment system* as a system that filters, de-waters, and compresses landfill gas. The alternative approach would be available for only new landfills subject to subpart XXX that treat the landfill gas for subsequent sale or beneficial use. The EPA is considering providing this flexibility for new landfills that beneficially use landfill gas, given the site-specific and end-use specific treatment requirements for different energy recovery technologies. The EPA is also requesting comment on providing this flexibility for all landfills. Most landfills that beneficially use landfill gas either combust the landfill gas in a device that achieves 98 percent destruction of NMOCs or they treat gas for sale or on-site use. This level of treatment and subsequent combustion not only achieves the environmental benefits of reducing landfill gas emissions, but also utilizes landfill gas as an energy resource.

This technical aspects of this alternative approach are consistent with public comments on previous notices (67 FR 36475, May 23, 2002 and 71 FR 53271, September 8, 2006). It is also consistent with input from the SERs and recent Federalism consultation participants who stated that the extent of filtration, de-watering, and compression can be site dependent, and that different sites require different levels of gas treatment to protect the combustion devices that use treated landfill gas as a fuel and ensure good combustion. The alternative treatment provisions are also consistent with the 2002 proposed definition of treatment system as “a system that filters, de-waters, and compresses landfill gas.” The alternative definition of treatment

system gas allows the level of treatment to be tailored to the type and design of the specific combustion equipment in which the landfill gas is used. Instead of meeting numerical specifications for treated landfill gas, owners/operators would specify the level of treatment based on the type and design of the specific combustion equipment that uses the treated landfill gas. Owners/operators would identify monitoring parameters and keep records that demonstrate that such parameters effectively monitor filtration, de-watering, or compression system performance necessary for the end use of the treated landfill gas. We are also proposing to define “treated landfill gas” to mean landfill gas processed in a treatment system. The intent of the treatment option is to require active lowering of the dew point consistent with the better available treatment systems, as such, we did not intend knock-out pots (for example) to qualify.

Owners/operators would develop a site-specific treatment system monitoring plan that would not only accommodate site-specific and end-use specific treatment requirements for different energy recovery technologies, but would also ensure environmental protection. Most landfill owners and operators that treat landfill gas combust the landfill gas in a combustion device that achieves 98 percent destruction of NMOCs. Thus, the treatment option offers a similar level of environmental protection as combusting the landfill gas. Landfill owners and operators that are beneficially using landfill gas are motivated to efficiently treat landfill gas for the intended purpose in order to protect energy recovery equipment, maintain warranties on equipment, and meet the gas specifications often specified in contractual requirements with third parties purchasing the gas. Thus, preparing the monitoring plan would document procedures to ensure that the landfill gas has been adequately treated for the intended use. Having a properly operated and efficient treatment system should minimize downtime of the entire GCCS (or routing of the landfill gas to a flare due to shutdown of end-use equipment) because the end-use equipment will continue to operate properly and will need less maintenance if the gas is treated appropriately. By minimizing downtime of the entire system, the destruction of NMOC will be maximized.

The plan would be required to include monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment

system is operating properly for the intended end use of the treated landfill gas. The plan would be required to include monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for the intended end use of the treated landfill gas. Documentation of the monitoring methods and ranges, along with justification, must be included in the site-specific monitoring plan. In the plan, the owner/operator would also need to identify who is responsible (by job title) for data collection, explain the processes and methods used to collect the necessary data, and describe the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.

The monitoring plan may rely on references to existing corporate documents (e.g., standard operating procedures, quality assurance programs or other documents) provided that the elements required by the monitoring plan are easily recognizable.

The owner or operator would be required to revise the monitoring plan to reflect changes in processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.

The plan must be kept on site and must be available for inspection. In addition, upon request by the Administrator, the owner or operator would be required to make all information that is collected in conjunction with the monitoring plan available for review during an audit or inspection.

##### *B. Wellhead Monitoring Requirements*

The EPA is requesting public comment on alternative wellhead monitoring requirements in proposed subpart XXX. One alternative monitoring provision could be in the form of an exclusion from the temperature and oxygen/nitrogen monitoring requirements, or a reduction in the frequency of monitoring. For example, the EPA could reduce the frequency of wellhead monitoring for these three parameters (temperature and oxygen/nitrogen) from monthly to a quarterly or semi-annual schedule. Owners or operators would continue to monitor the wellhead for negative pressure.

The EPA is specifically requesting comment on whether this adjustment should apply only to landfills that



beneficially use landfill gas, and if so whether any quantity of the recovered LFG should qualify for alternative wellhead monitoring. Alternatively, the EPA is requesting comment on whether it would be more appropriate to require a certain percentage of the overall recovered LFG to be beneficially used in order to exempt landfills from or reduce the frequency of the wellhead monitoring requirements. The EPA also requests comments on the availability of this flexibility to small entities owning or operating landfills, regardless of beneficial use.

The EPA would provide these alternatives to encourage new landfills to beneficially use landfill gas. Both of these alternative options (exclusion or reduced monitoring frequency) would provide monitoring relief to these landfills. Landfill owners and operators must operate their GCCS in a manner that collects the most landfill gas and minimizes losses of landfill gas through the surface of the landfill. In addition, landfills would still have to prepare and submit to the regulating authority a gas collection design plan, prepared by a professional engineer.

As proposed, subpart XXX requires landfill owners and operators to operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. Instead of having the landfill owner or operator conduct monthly monitoring of temperature and nitrogen/oxygen at the wellheads, the EPA is considering relying on landfill surface emission monitoring requirements in combination with maintenance of negative pressure at wellheads to indicate proper operation of the GCCS and minimization of surface emissions. The potential removal of the temperature and nitrogen/oxygen operational standards and associated wellhead monitoring requirements for these three parameters would be complemented by the surface monitoring provisions discussed in this preamble. As discussed in section VII.F and VIII.F of this preamble, we are reiterating that landfills must monitor *all cover penetrations* and openings within the area of the landfill where waste has been placed and a gas collection system is required.

Given recent technological advancements in data storage and transmission, the EPA is also considering an alternative to automate the wellhead monthly monitoring provisions. Automation could reduce long-term burden on landfill owner/operators as well as delegated

authorities by allowing for a more frequent, but less labor-intensive, data collection system consisting of remote wellhead sensors (i.e. thermistors, electronic pressure transducers, oxygen cells) and a centralized data logger.

The use of continuous monitoring would allow more immediate detection and repair. This would eliminate the time between when the exceedance of the parameter occurs and when it is detected. It could also improve enforceability of the rule by allowing inspectors to review information on the data logger in real time during a site visit. Another advantage to automating the monitoring is that it could provide flexibility for incorporating additional parameters into the monitoring program. The EPA is soliciting comment on this alternative, including the types of parameters that are best suited for an automated monitoring alternative, examples of successful automated monitoring programs at MSW landfills and their associated costs, additional considerations for equipment calibration, and input on any averaging times that might be appropriate to determine when one or more monitored parameters have been exceeded.

#### C. Enhanced Surface Monitoring Requirements

The EPA is requesting public comment on potential alternative approaches to the surface emission monitoring in proposed subpart XXX. Subpart XXX collection and control requirements are intended for landfills to maintain a tight cover that minimizes any emissions of landfill gas through the surface. The surface emissions monitoring procedures in proposed subpart XXX require quarterly surface emissions monitoring to demonstrate that the cover and gas collection system are working properly. The operational requirements in subpart XXX (40 CFR 60.763(d)) specify that the landfill must “. . . operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover.”

Proposed subpart XXX requires quarterly monitoring and includes provisions for increased monitoring and corrective procedures if readings above 500 ppm are detected. Instrumentation

specifications, monitoring frequencies, and monitoring patterns are structured to provide clear and straightforward procedures that are the minimum necessary to assure compliance.

In this document, we are requesting public comment on potential alternatives to the surface monitoring procedures in proposed subpart XXX. Potential alternatives could include provisions such as those in a California regulation (provisions in California Air Resources Board, Final Regulation Order, Methane Emissions from Municipal Solid Waste Landfills (Article 4, Subarticle 6, sections 95460 to 95476, title 17, California Code of Regulations)) and include changing the walking pattern that traverses the landfill, adding an integrated methane concentration measurement, and allowing sampling only when wind is below a certain speed.

For subpart XXX, we are requesting comment on reducing the interval for the walking pattern that traverses the landfill from 30 meters (98 ft.) to 25 ft. We are also requesting comment on the addition of a methane concentration limit of 25 ppm as determined by integrated surface emissions monitoring. This would be in addition to the 500 ppm emission concentration as determined by instantaneous surface emissions monitoring. Integrated surface emissions monitoring provides an average surface emission concentration across a specified area. For integrated surface emissions monitoring, the specified area would be individually identified 50,000 square foot grids. A tighter walking pattern and the addition of an integrated methane concentration would more thoroughly ensure that the collection system is being operated properly, that the landfill cover and cover material are adequate, and that methane emissions from the landfill surface are minimized. As part of these potential changes, the EPA is also considering not allowing surface monitoring when the average wind speed exceeds 5 miles per hour or the instantaneous wind speed exceeds 10 miles per hour because air movement can affect whether the monitor is accurately reading the methane concentration during surface monitoring. We are considering this change because measurements during windy periods are usually not representative of the emissions.

The EPA estimated the costs associated with both the proposed subpart XXX surface monitoring requirements (which are the same as the surface monitoring requirements in subpart WWW) and potential changes to the surface monitoring provisions under

the proposed option 2.4/40 and applied them to the set of new landfills that would be subject to control requirements under the respective option. To determine the costs, the EPA used the following assumptions: Most landfills will hire a contractor to conduct the quarterly monitoring. The landfill will incur labor costs based on the time it takes to walk the traverse (hours per acre), the size of the landfill (acres), and a labor rate (dollars per hour). The landfill will also incur an

equipment rental rate (dollars per hour). Equipment rental rates are dollars per day/week/month, depending on the size of the landfill and time to traverse the acreage during each quarterly period. See the docketed memo "Methodology for Estimating Testing and Monitoring Costs for the MSW Landfill Regulations, 2014," which contains the details for determining the costs that a landfill would incur to conduct enhanced surface monitoring.

Using the techniques discussed in section V.A of this preamble, the EPA

estimated the number of landfills that are expected to install controls under the baseline, as well as the proposed option 2.5/40. Then, the EPA applied surface monitoring costs to the respective set of landfills because landfills that must install controls must also conduct surface monitoring. Table 5 of this preamble compares the enhanced surface monitoring costs that would be incurred for new landfills under the baseline and proposed option 2.5/40.

TABLE 5—COMPARISON OF BASELINE SURFACE MONITORING VERSUS ENHANCED SURFACE MONITORING IN 2023

| Control option            | Surface monitoring option                       | Number of landfills affected | Number of landfills controlling | Total annual cost (2012\$) | Incremental cost | Total cost per controlled landfill | Incremental cost per controlled landfill |
|---------------------------|-------------------------------------------------|------------------------------|---------------------------------|----------------------------|------------------|------------------------------------|------------------------------------------|
| Baseline (2.5/50) ...     | No change (30 meter traverse).                  | 17                           | 8                               | 42,300                     | N/A              | 5,300                              | N/A                                      |
|                           | Enhanced (25-foot traverse, integrated sample). | 17                           | 8                               | 312,800                    | 270,500          | 39,100                             | 33,800                                   |
| Proposed option (2.5/40). | No change (30 meter traverse).                  | 17                           | 11                              | 50,000                     | 7,700            | 4,500                              | 700                                      |
|                           | Enhanced (25-foot traverse, integrated sample). | 17                           | 11                              | 362,900                    | 320,600          | 33,000                             | 29,100                                   |

Several factors contribute to the cost of enhanced surface monitoring. Monitoring along a traverse with a 25 ft. interval would increase monitoring time, and thus the labor costs, compared to monitoring along a 30 meter (98 ft.) interval. Monitoring along the tighter traverse pattern would take approximately four times as long, because the distance is approximately four times. For a landfill to conduct the integrated surface emissions monitoring, the EPA assumed the landfill would rent a handheld portable vapor analyzer with a data logger. The data logger is necessary to obtain an integrated reading over a single 50,000 square foot grid. However, the EPA does not expect that requiring an integrated methane concentration would add significant cost because landfills could use the same instrument that they currently use for the instantaneous readings and these instruments can be programmed to provide an integrated value as well as an instantaneous value.

The EPA recognizes that these provisions could reduce surface emissions and that these emissions reductions are difficult to quantify. The EPA also understands that there are potential implementation concerns with these enhanced procedures. Surface monitoring is a labor intensive process

and tightening the grid pattern would increase costs. Of the eight landfills expected to install controls under the baseline, it would take these landfills over 29 hours, on average, to complete each quarterly traverse pattern. Tightening the traverse pattern to 25-feet instead of 30-meters would require over 79 hours per quarter, or more than 200 additional hours per year compared to the current 30-meter traverse pattern. At this time, the EPA is not proposing surface monitoring provisions that differ from those outlined in subpart WWW, but we are soliciting comment on techniques and data to estimate the emission reductions associated with enhanced surface monitoring.

The EPA is requesting comment on allowing the use of alternative remote measurement and monitoring techniques for landfills that exceed the surface monitoring concentrations in subpart XXX. The EPA would like information to determine whether or not to allow these alternative techniques to be used to demonstrate that surface emissions are below the methane surface concentrations in the subpart XXX. Alternative remote measurement and monitoring techniques may include radial plume mapping (RPM), optical remote sensing, Fourier Transform Infrared (FTIR) spectroscopy, cavity

ringdown spectroscopy (CRDS), tunable diode laser (TDL), tracer correlation, micrometeorological eddy-covariance, static flux chamber, or differential absorption. The EPA is also seeking comment on the frequency of testing and the format of the standard to use these technologies as an alternative to average surface concentration as measured by Method 21. Incorporation of these technologies in subpart XXX would require a change in format of the standard to be consistent with the technology.

#### *D. Alternative Emission Threshold Determination Techniques*

The EPA is considering adjusting the emission threshold determinations that dictate when a GCCS must be installed, including variations in the modeling parameters as well as adding site-specific emission threshold determination. These alternatives may provide additional reporting and compliance flexibilities for owners and operators of affected landfills.

##### *1. Modeling Adjustments*

As proposed, subpart XXX has three different tiers available to an affected landfill to estimate whether or not the landfill exceeds the NMOC emission threshold of 50 Mg per year. The



simplest Tier 1 calculation method uses default values for the potential methane generation capacity ( $L_0$ ) and methane generation rate ( $k$ ) to determine when the landfill exceeds the 50 Mg NMOC per year emission rate cutoff. The default  $L_0$  is 170  $m^3$  per Mg of waste (equal to 5,458 cubic feet methane per ton of waste) and the  $k$  values are 0.05 per year for areas receiving 25 inches or more of rainfall per year and 0.02 per year for areas receiving less than 25 inches of rainfall. The Tier 1 default NMOC concentration is 4,000 ppmv as hexane. If the Tier 1 calculated NMOC exceeds 50 Mg per year, the landfill must install controls or demonstrate, using more complex Tier 2 or 3 procedures, that NMOC emissions are less than 50 Mg per year.

The EPA is soliciting comment on allowing for alternative Tier 1 default values and modeling techniques based on the amount of organics in the waste. For example, the  $L_0$  is a function of the moisture content and organic content of the waste and  $L_0$  decreases as the amount of organic matter decreases. Recent studies have shown that average U.S. landfill  $L_0$  values have decreased 22 percent between 1990 and 2012 (from 102.6  $m^3$  per Mg of waste to 79.8  $m^3$  per Mg of waste) due to increased recovery of organic materials.<sup>27</sup> Subpart XXX could allow for landfill-specific  $L_0$  values to be calculated based on the amount of degradable organic carbon (DOC), similar to components of Equation HH-1 in the GHGRP for MSW landfills (40 CFR part 98 subpart HH).

Subpart HH of the GHGRP also provides separate  $k$ -values for different types of materials, which could be used as alternate Tier 1 default values in the revised NSPS. Sewage sludge and food waste have the highest  $k$  values, followed by garden waste, diapers, paper, textiles, and wood and straw.<sup>11</sup>

The IPCC model employs a modeling method to accommodate separate  $k$  and DOC modeling parameters as well as separate calculations for six different categories of organic wastes.<sup>28</sup>

If the EPA incorporates alternative Tier 1 modeling values in subpart XXX, the EPA would also need to allow for an alternative first-order decay model structure to compute a total methane generation rate for the landfill based on the sum of the methane generated from each separate waste stream. This

alternative model may incorporate material-specific  $k$  and  $L_0$  values, instead of a single pair of  $k$  and  $L_0$  values applied to bulk MSW. The EPA requests comment on whether the alternative modeling parameters and model structure in subpart HH, or other default parameters or modeling procedures would be appropriate to use for emission threshold determinations in subpart XXX.

## 2. Site-Specific Measurements

Under the proposed subpart XXX, there are three different tiers available to an affected landfill to estimate whether or not the landfill exceeds the NMOC emission threshold of 50 Megagrams per year. If an affected landfill fails a Tier 2 test (i.e., the calculated NMOC emissions are greater than 50 Mg/year), then the landfill must conduct Tier 3 testing or install and operate an active GCCS. The EPA received comments while conducting outreach with small entities that recommended a new Tier 4 surface emission monitoring (SEM) demonstration to allow increased flexibility for landfills that exceed modeled NMOC emission rates if they can demonstrate that site-specific methane emissions are low. This SEM demonstration would be conducted using similar procedures in proposed subpart XXX (see proposed 40 CFR 60.765(d)). If the monitoring finds that methane emissions are below a level that the EPA finalizes in the NSPS review, then installation of a GCCS could be delayed.

As an example, the California Air Resources Board (ARB) adopted the Methane Emissions from MSW Landfills regulation in 2009.<sup>29</sup> Under this rule, if a landfill exceeds the waste-in-place and heat input thresholds, the landfill may conduct an SEM demonstration prior to being required to install a GCCS. If the surface methane emissions show any exceedances above 200 ppm the landfill must install a GCCS. This SEM demonstration is similar to the Tier 4 option being considered by the EPA.

The EPA is soliciting comment about this new Tier 4 option or other ideas for more flexible emission threshold determination "Tiers" and what implementation procedures for each determination may be appropriate. As the EPA takes this new Tier 4 option under consideration, there are some implementation procedures that would need to be established. The EPA

requests comment on all aspects of implementing a new Tier 4 option, including the following specific items: (1) Which areas of the landfill would be subject to SEM requirements because these areas would no longer be limited to areas with GCCS installed for applicability purposes; (2) what number of exceedances over a specified time period that would require GCCS installation (proposed subpart XXX specifies a new well must be installed at three or more exceedances in a quarter); (3) what frequency of SEM demonstration (e.g., quarterly monitoring for landfills accepting waste, annual monitoring for closed landfills) is appropriate; and (4) what exceedance level is appropriate for determining if a GCCS must be installed (200 ppm or some other level).

## X. Impacts of Proposed Revisions

The impacts shown in this section are expressed as the incremental difference between facilities affected by baseline and the proposed reduction of the NMOC emission threshold to 40 Mg/yr from the current NSPS level of 50 Mg/yr. There are incremental costs, emissions, and secondary impacts associated with capturing and/or utilizing the additional LFG under this proposal.

As discussed in section V.B of this preamble, for most NSPS, impacts are expressed 5 years after the effective date of the rule. However, for the landfills NSPS, impacts are expressed 10 years after (year 2023) because the landfills regulations require controls at a given landfill only after the increasing NMOC emission rate reaches the level of the regulatory threshold. Additionally, the regulations allow the collection and control devices to be capped or removed at each landfill after certain criteria are met, which includes having the GCCS operate a minimum of 15 years. Controls would not be required over the same time period for all landfills. The impacts are a direct result of control; therefore, the annualized impacts change from year to year. By 2023, over half of the modeled new landfills are expected to have installed controls and thus, the EPA considered the impacts of the proposal relative to the baseline in 2023, as discussed in section V.B and VI of this preamble. The methodology for estimating the impacts of the NSPS is discussed in section VI of this preamble and in the docketed memorandum "Methodology for Estimating Cost and Emission Impacts of MSW Landfills Regulations. 2014." The results of applying this methodology to the population of future landfills potentially subject to this proposal are in the

<sup>27</sup> Stege, Alex. The Effects of Organic Waste Diversion on LFG Generation and Recovery from U.S. Landfills. SWANA's 37th Annual Landfill Gas Symposium. 2014.

<sup>28</sup> Intergovernmental Panel on Climate Change (IPCC), *IPCC Guidelines for National Greenhouse Gas Inventories*. Volume 5 (Waste), Chapter 3 (Solid Waste Disposal). 2006.

<sup>29</sup> California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, section 95463, Methane Emissions from Municipal Solid Waste Landfills.

## Attachment F

U.S. EPA, Emission Guidelines, Compliance Times, and  
Standards of Performance for Municipal Solid Waste Landfills;  
**Proposed Rules, 80 Fed. Reg. 52,100 (Aug. 27, 2015)** (excerpts)

**ENVIRONMENTAL PROTECTION  
AGENCY****40 CFR Part 60****[EPA-HQ-OAR-2014-0451; FRL-9930-64-  
OAR]****RIN 2060-AS23****Emission Guidelines and Compliance  
Times for Municipal Solid Waste  
Landfills****AGENCY:** Environmental Protection  
Agency.**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing a new subpart that updates the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Emission Guidelines). The EPA determined that it was appropriate to review the landfills Emission Guidelines based on changes in the landfills industry since the Emission Guidelines were promulgated in 1996. The EPA's review of the Emission Guidelines for municipal solid waste (MSW) landfills applies to landfills that accepted waste after November 8, 1987, and commenced construction, reconstruction, or modification on or before July 17, 2014. Based on its initial review, the EPA has determined that it is appropriate to propose revisions to the Emission Guidelines that reflect changes to the population of landfills and the results of an analysis of the timing and methods for reducing emissions. This action proposes to achieve additional reductions of landfill gas (LFG) and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This action also incorporates new data and information received in response to an advanced notice of proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system.

In addition to considering information received in response to this proposed rule in evaluating potential changes to the Emission Guidelines, the EPA intends to consider the information in evaluating whether changes to the requirements for new sources beyond those in the July 17, 2014, proposed rule for new sources are warranted.

The proposed revisions to the Emission Guidelines, once implemented through revised state plans or a revised federal plan, would reduce emissions of LFG, which contains both nonmethane organic compounds and methane.

Landfills are a significant source of methane which is a potent greenhouse gas (GHG) pollutant. These avoided emissions will improve air quality and reduce public health and welfare effects associated with exposure to landfill gas emissions.

**DATES:**

**Comments.** Comments must be received on or before October 26, 2015. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before September 28, 2015.

**Public Hearing.** If anyone contacts the EPA requesting a public hearing by September 1, 2015, the EPA will hold a public hearing on September 11, 2015 from 1:00 p.m. (Eastern Standard Time) to 5:00 p.m. (Eastern Standard Time) at the location in the **ADDRESSES** section. If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by September 1, 2015, a public hearing will not take place. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at <http://www.epa.gov/ttnatw01/landfill/landflpg.htm>. Please contact Ms. Aimee St. Clair at (919) 541-1063 or at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov) to register to speak at the hearing. The last day to pre-register to speak at the hearing will be September 8, 2015.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2014-0451, to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit

[http://www2.epa.gov/dockets/](http://www2.epa.gov/dockets/commenting-epa-dockets)  
[commenting-epa-dockets](http://www2.epa.gov/dockets/commenting-epa-dockets).

**Public Hearing.** If a public hearing is held, it will be at the U.S. Environmental Protection Agency building located at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at <http://www.epa.gov/ttnatw01/landfill/landflpg.htm>.

Please see section II.D of the **SUPPLEMENTARY INFORMATION** for detailed information on the public hearing.

**Docket:** All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, *e.g.*, CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center, EPA/DC, EPA WJC West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this proposal, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143-05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-3154; fax number: (919) 541-0246; email address: [ward.hillary@epa.gov](mailto:ward.hillary@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**Acronyms and Abbreviations.** The following acronyms and abbreviations are used in this document.

ACUS Administrative Conference of the United States  
ANPRM Advance notice of proposed rulemaking  
ANSI American National Standards Institute  
ARB Air Resources Board  
BMP Best management practice  
BSER Best system of emission reduction  
Btu British thermal unit  
CAA Clean Air Act  
CA LMR California Landfill Methane Rule  
CBI Confidential business information  
CDX Central Data Exchange  
CEA Council of Economic Advisers  
CEDRI Compliance and Emissions Data Reporting Interface

CFR Code of Federal Regulations  
CO<sub>2</sub> Carbon dioxide  
CO<sub>2</sub>e Carbon dioxide equivalent  
DOC Degradable organic carbon  
EPA Environmental Protection Agency  
ERT Electronic Reporting Tool  
GCCS Gas collection and control system  
GHG Greenhouse gas  
GHGRP Greenhouse Gas Reporting Program  
GWP Global warming potential  
HAP Hazardous air pollutant  
HOV Higher operating value  
IAMS Integrated assessment models  
ICR Information collection request  
IPCC Intergovernmental Panel on Climate Change  
IRFA Initial regulatory flexibility analysis  
IWG Interagency working group  
lb/MMBtu Pounds per million British thermal unit  
LCRS Leachate collection and removal system  
LFG Landfill gas  
LFGCost Landfill Gas Energy Cost Model  
LMOP Landfill Methane Outreach Program  
m<sup>3</sup> Cubic meters  
Mg Megagram  
Mg/yr Megagram per year  
mph Miles per hour  
MSW Municipal solid waste  
mtCO<sub>2</sub>e Metric tons of carbon dioxide equivalent  
MW Megawatt  
MWh Megawatt hour  
NAICS North American Industry Classification System  
NMOC Nonmethane organic compound  
NRC National Research Council  
NSPS New source performance standards  
NTTAA National Technology Transfer and Advancement Act  
OAQPS Office of Air Quality Planning and Standards  
OMB Office of Management & Budget  
PM Particulate matter  
PM<sub>2.5</sub> Fine particulate matter  
ppm Parts per million  
ppmvd Parts per million by dry volume  
RCRA Resource Conservation and Recovery Act  
RFA Regulatory Flexibility Act  
RFS Renewable Fuel Standard  
RIA Regulatory Impacts Analysis  
SBAR Small Business Advocacy Review  
SC-CH<sub>4</sub> Social cost of methane  
SC-CO<sub>2</sub> Social cost of carbon dioxide  
SEM Surface emissions monitoring  
SER Small entity representative  
SO<sub>2</sub> Sulfur dioxide  
SSM Startup, shutdown and malfunction  
Tg Teragram  
TIP Tribal implementation plan  
TTN Technology Transfer Network  
U.S. United States  
USGCRP U.S. Global Change Research Program  
VCS Voluntary consensus standard  
VOC Volatile organic compound  
WWW World Wide Web

*Organization of This Document.* The following outline is provided to aid in locating information in this preamble.

#### I. Executive Summary

- A. Purpose of Regulatory Action
- B. Summary of Major Provisions

- C. Costs and Benefits
- II. General Information
  - A. Does this action apply to me?
  - B. What should I consider as I prepare my comments?
  - C. Where can I get a copy of this document and other related information?
  - D. Public Hearing
- III. Background
  - A. Landfill Gas Emissions and Climate Change
  - B. What are the health and welfare effects of landfill gas emissions?
  - C. What is EPA's authority for reviewing the Emission Guidelines?
  - D. What is the purpose and scope of this action?
  - E. How would the proposed changes in applicability affect sources currently subject to subparts Cc and WWW?
  - F. Where in the CFR will these changes appear?
- IV. Summary of Proposed Changes Based on Review of the Emission Guidelines
  - A. Control Technology Review
  - B. Proposed Changes to Monitoring, Recordkeeping, and Reporting
  - C. Emission Threshold Determinations
  - D. Proposed Changes To Address Closed or Non-Producing Areas
  - E. Other Proposed Changes
- V. Rationale for the Proposed Changes Based on GCCS Technology Review
  - A. Control Technology Review
  - B. What data and control costs did the EPA consider in evaluating potential changes to the timing of installing, expanding, and removing the GCCS?
  - C. What emissions and emission reduction programs are associated with existing MSW landfills?
  - D. What control options did the EPA consider?
  - E. How did we select the proposed options?
- VI. Rationale for the Proposed Changes to Monitoring, Recordkeeping, and Reporting
  - A. Surface Emissions Monitoring Requirements
  - B. Wellhead Monitoring Requirements
  - C. Requirements for Updating the Design Plan
  - D. Submitting Corrective Action Timeline Requests
  - E. Electronic Reporting
- VII. Rationale for Proposed Alternative Emission Threshold Determination Techniques
- VIII. Proposed Changes To Address Closed or Non-Producing Areas
  - A. Subcategory for Closed Landfills
  - B. Criteria for Capping or Removing a GCCS
  - C. Non-Producing Areas and Wellhead Standards
- IX. Rationale for the Other Proposed Changes
  - A. Landfill Gas Treatment
  - B. Startup, Shutdown, and Malfunction
  - C. Definitions and Other Rule Changes
- X. Request for Comment on Specific Provisions
  - A. Defining Closed Areas of Open Landfills
  - B. Enhanced Surface Emissions Monitoring
  - C. Wet Landfills
  - D. Monitoring Wellhead Flowrate

- E. Third-Party Design Plan Certification Program
- F. Use of Portable Analyzers for Monitoring Oxygen
- XI. Impacts of Proposed Revisions
  - A. What are the air quality impacts?
  - B. What are the water quality and solid waste impacts?
  - C. What are the secondary air impacts?
  - D. What are the energy impacts?
  - E. What are the cost impacts?
  - F. What are the economic impacts?
  - G. What are the benefits?
- XII. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
  - B. Paperwork Reduction Act
  - C. Regulatory Flexibility Act (RFA)
  - D. Unfunded Mandates Reform Act (UMRA)
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
  - H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act
  - J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

#### I. Executive Summary

##### A. Purpose of Regulatory Action

This action proposes changes to the MSW landfills Emission Guidelines resulting from the EPA's review of the Emission Guidelines under Clean Air Act (CAA) section 111. The EPA's review identified a number of advances in technology and operating practices and the proposed changes are based on our evaluation of those advances and our understanding of LFG emissions. The resulting changes to the Emission Guidelines, if adopted, will achieve additional reductions in emissions of landfill gas and its components, including methane. This proposed rule is consistent with the President's 2013 Climate Action Plan,<sup>1</sup> which directs federal agencies to focus on "assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions." The proposed changes are also consistent with the

<sup>1</sup> Executive Office of the President, "The President's Climate Action Plan" June 2013. <https://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>.

President's Methane Strategy,<sup>2</sup> which directs EPA's regulatory and voluntary programs to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs. These directives are discussed in detail in section III.A of this preamble. This regulatory action also proposes to either resolve or clarify implementation issues that were previously addressed in amendments proposed on May 23, 2002 (67 FR 36475) and September 8, 2006 (71 FR 53271).

#### 1. Need for Regulatory Action

The EPA reviewed the Emission Guidelines to determine the potential for achieving additional reductions in emissions of LFG. Such reductions would reduce air pollution and the resulting harm to public health and welfare. Significant changes have occurred in the landfill industry over time, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. Based on the EPA's initial review, we are proposing changes to the Emission Guidelines. The proposed changes, if adopted, will achieve additional emission reductions of LFG and its components (including methane), provide more effective options for demonstrating compliance, and provide clarification of implementation issues raised during the amendments proposed in 2002 and 2006.

#### 2. Legal Authority

The EPA is not statutorily obligated to conduct a review of the Emission Guidelines, but has the discretion to do so when circumstances indicate that it is appropriate. The EPA has determined that it is appropriate to review and propose changes to the Emission Guidelines at this time based on changes in the landfill industry and changes in the size, ownership, and age of landfills since the Emission Guidelines were promulgated in 1996. The EPA compiled new information on landfills through data collection efforts for a statutorily mandated review of the existing new source performance standards (NSPS) (40 CFR part 60, subpart WWW), public comments received on the NSPS proposal (79 FR 41796, July 17, 2014), and public comments received on the Advanced Notice of Proposed Rulemaking (ANPRM) (79 FR 41772, July 17, 2014)

for a review of the Emission Guidelines. This information is allowing the EPA to assess current practices, emissions, and the potential for additional emission reductions.

#### B. Summary of Major Provisions

The proposed revised Emission Guidelines will ultimately apply to landfills that accepted waste after November 8, 1987,<sup>3</sup> and that commenced construction, reconstruction, or modification on or before July 17, 2014 (the date of publication of proposed revisions to the landfills NSPS, 40 CFR part 60, subpart XXX). The proposed rule provisions are described below.

**Thresholds for installing or removing controls.** The proposed revised Emission Guidelines retain the current design capacity threshold of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>), but reduce the nonmethane organic compounds (NMOC) emission threshold for the installation and removal of a gas collection and control system (GCCS) from 50 Mg/yr to 34 Mg/yr for landfills that are not closed. As proposed, an MSW landfill that exceeds the design capacity threshold must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr NMOC. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) Consistent with the existing Emission Guidelines, the owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

**Landfill Gas Treatment.** The EPA is proposing to address two issues related to LFG treatment. First, the EPA is proposing to clarify that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but also allows other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, and use as a raw material in a chemical manufacturing process. Second, the EPA is proposing to define *Treated landfill gas* as LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart Cf and to define *Treatment system* as a system that

filters, de-waters, and compresses LFG for sale or beneficial use. The proposed definition allows the level of treatment to be tailored to the type and design of the specific combustion or other equipment for other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process in which the LFG is used. Owners or operators would develop a site-specific treatment system monitoring plan that would include monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. They would also keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for the end use of the treated LFG.

**Surface Monitoring.** The EPA proposes monitoring of all surface penetrations for existing landfills. In proposed 40 CFR part 60, subpart Cf, landfills must conduct surface emissions monitoring (SEM) at all cover penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required to be in place and operating according to the operational standards in proposed 40 CFR part 60, subpart Cf. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis at the specified intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

**Emission Threshold Determination.** The EPA is proposing an alternative site-specific emission threshold determination for when a landfill must install and operate a GCCS. This alternative emission threshold determination, referred to as "Tier 4," is based on surface emission monitoring and demonstrates that surface emissions are below a specific threshold. The Tier 4 SEM demonstration would allow landfills that exceed modeled NMOC emission rates using Tiers 1, 2, or 3 to demonstrate that site-specific surface methane emissions are low. A landfill that can demonstrate that surface emissions are below 500 parts per million (ppm) for 4 consecutive quarters would not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded.

**Wellhead Operational Standards.** The EPA proposes to remove the operational

<sup>2</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. [https://www.whitehouse.gov/sites/default/files/strategy\\_to\\_reduce\\_methane\\_emissions\\_2014-03-28\\_final.pdf](https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf).

<sup>3</sup> This date in 1987 is the date on which permit programs were established under the Hazardous and Solid Waste Amendments of the Resource, Conservation and Recovery Act (RCRA) which amended the Solid Waste Disposal Act (SWDA), 42 U.S.C. 6901–6992k. This date was also selected as the regulatory cutoff in the EG for landfills no longer receiving wastes because the EPA judged States would be able to identify active facilities as of this date.

EPA believes these adjustments provide more flexibility to landfills, can result in additional reductions of LFG emissions from other GCCS components, and will reduce the burden of corrective action on both the landfill owner or operator and the implementing authority. Based on public input, the EPA expects that eliminating the operational standards for oxygen/nitrogen and temperature will drastically reduce the number of requests for HOVs and alternative timelines for making corrections while ensuring that the GCCS continues to operate properly. The procedures for approving HOVs for wellheads not demonstrating compliance with the negative pressure standard are discussed in section VI.D of this preamble.

While the EPA is proposing to remove the requirement to meet operational standards for temperature and nitrogen/oxygen, the EPA is proposing that landfill owners or operators continue monthly monitoring and recordkeeping of the wellhead temperature and oxygen/nitrogen values, consistent with operational guidance documents and best practices for operating a GCCS in a safe and efficient manner.<sup>62 63</sup> Based on our evaluation of commenters' concern that the oxygen/nitrogen and temperature operational standards can be a limiting factor in promoting earlier and more robust collection of LFG, the EPA is proposing to no longer require the landfill to take corrective action if the monitoring of these parameters demonstrates that a particular value or values is/are exceeded. The EPA is proposing that landfill owners or operators continue monitoring these parameters because, as several industry commenters and regulatory agencies stated, the measurement of these parameters can still serve as useful guidance for landfill operators and landfill gas energy project operators because they assess GCCS performance and thus help to periodically adjust or "tune" the GCCS to minimize LFG emissions and maintain safe operating conditions at the landfill. The equipment used to monitor wellheads commonly includes these parameters, so these parameters can be measured at the same time the technician monitors wellhead pressure without imposing additional burden. The results of this monthly wellhead monitoring will now be kept as records on site because the EPA continues to believe these data will be useful for implementing authorities

when approving modifications to the original GCCS design plan, or when conducting inspections of the site.

The requirement to maintain negative pressure at each wellhead ensures that gas is being routed to a GCCS that was designed and built in accordance with a GCCS design plan that has been approved by a professional engineer. The EPA believes these wellhead standards, together with the surface emission monitoring requirements, are effective and limit the possibility of surface emissions of LFG. This approach also allows landfills and state regulators the time and flexibility to determine the appropriate response for adjusting wellfield operations, as needed, without imposing overly prescriptive requirements. This approach also provides increased flexibility for landfills to install supplemental and temporary gas collection components to achieve additional reductions of LFG without the risk of exceeding oxygen/nitrogen or temperature operational standards.

#### *C. Requirements for Updating the Design Plan*

The EPA is proposing criteria for when an affected source must update its design plan and submit it to the implementing authority for approval. We are proposing that a revised design plan must be submitted as follows: (1) Within 90 days of expanding operations to an area not covered by the previously approved design plan, and (2) prior to installing or expanding the gas collection system in a manner other than as described in a previously approved design plan.

The EPA is proposing site-specific design plan review and approval procedures that recognize the unique site-specific topography, climate, and other factors affecting the design of the GCCS. However, the EPA solicits comment on ways to streamline the design plan submission and approval procedures as part of its review of the Emission Guidelines. Examples of streamlining may include the potential development of a process by which approved alternative operating parameters could be automatically linked to updates of design plans or development of a process by which alternative operating parameters and updated design plans could be approved on a similar schedule.

#### *D. Submitting Corrective Action Timeline Requests*

We have included provisions in proposed 40 CFR part 60, subpart Cf (40 CFR 60.36f(a)(3)) to clarify our intent that agency approval of corrective action

timelines is required only if a landfill does not fix an exceedance in 15 days and is unable to or does not plan to expand the gas collection system within 120 days. The EPA is clarifying that "expansion" of the GCCS means a permanent change that increases the capacity of the GCCS, such as increasing the size of header pipes, increasing the blower sizes and capacity, and increasing the number of wells. Excluding system expansion, all other types of corrective actions expected to exceed 15 calendar days should be submitted to the agency for approval of an alternate timeline. In addition, if a landfill owner or operator expects the system expansion to exceed the 120-day allowance period, it should submit a request and justification for an alternative timeline. We have not proposed a specific schedule for submitting these requests for alternative corrective action timelines because investigating and determining the appropriate corrective action, as well as the schedule for implementing the corrective action, will be site specific and depend on the reason for the exceedance. We clarify that a landfill should submit an alternative timeline request as soon as possible (*i.e.*, as soon as the owner or operator knows that it would not be able to correct the exceedance in 15 days or expand the system in 120 days) to avoid being in violation of the rule. If the landfill were to wait until 120 days after the exceedance to submit an alternative timeline, then by the time the regulatory agency has the chance to review the timeline and determine if it is approvable, the landfill will already be in violation of the requirement to expand the system within 120 days. After submitting the alternative timeline request, the landfill should work with its permitting authority to communicate the reasons for the exceedances, status of the investigation, and schedule for corrective action.

To address implementation concerns associated with the time allowed for corrective action, the EPA requests comment on an alternative that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days from when an exceedance is identified. Many requests for an alternative compliance timeline express the need for additional time to make necessary repairs to a well that requires significant construction activities. Extending the time period to as soon as practicable, but no later than 60 days, may reduce the burden associated with the approval of an alternative timeline and ensure

<sup>62</sup> <http://www.epa.ohio.gov/portals/27/engineer/engineers/guide78.pdf>.

<sup>63</sup> <http://www.nrel.gov/docs/legosti/fy97/23070.pdf>.

sufficient time for correction without significant environmental detriment. If the EPA were to extend the time period to as soon as practicable, but no later than 60 days, then the EPA is also considering the removal of the provision to submit an alternative timeline for correcting the exceedance. Thus, by no later than day 60, the landfill would have to either have completed the adjustments and repairs necessary to correct the exceedance, or be prepared to have the system expansion completed by day 120. The EPA is also requesting input on whether 60 days is the appropriate amount of time to allow owners or operators to make the necessary repairs.

#### E. Electronic Reporting

In this proposal, the EPA is describing a process to increase the ease and efficiency of performance test data submittal while improving data accessibility. Specifically, the EPA is proposing that owners or operators of MSW landfills submit electronic copies of required performance test and performance evaluation reports by direct computer-to-computer electronic transfer using the EPA-provided software. The direct computer-to-computer electronic transfer is accomplished through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). The CDX is the EPA's portal for submittal of electronic data. The EPA-provided software is called the Electronic Reporting Tool (ERT), which is used to generate electronic reports of performance tests and evaluations. The ERT generates an electronic report package that will be submitted using the CEDRI. The submitted report package will be stored in the CDX archive (the official copy of record) and the EPA's public database called WebFIRE. All stakeholders will have access to all reports and data in WebFIRE and accessing these reports and data will be very straightforward and easy (see the WebFIRE Report Search and Retrieval link at <http://cfpub.epa.gov/webfire/index.cfm?action=fire.searchERTSubmission>). A description and instructions for use of the ERT can be found at <http://www.epa.gov/ttn/chief/ert/index.html>, and CEDRI can be accessed through the CDX Web site at [www.epa.gov/cdx](http://www.epa.gov/cdx). A description of the WebFIRE database is available at <http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main>.

The proposal to submit performance test data electronically to the EPA applies only to those performance tests conducted using test methods that are

supported by the ERT. The ERT supports most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available at <http://www.epa.gov/ttn/chief/ert/index.html>.

We believe that industry would benefit from this proposed approach to electronic data submittal. Specifically, by using this approach, industry will save time in the performance test submittal process. Additionally, the standardized format that the ERT uses allows sources to create a more complete test report resulting in less time spent on data backfilling if a source failed to include all data elements required to be submitted. Also through this proposal, industry may only need to submit a report once to meet the requirements of the applicable subpart because stakeholders can readily access these reports from the WebFIRE database. This also benefits industry by cutting back on recordkeeping costs as the performance test reports that are submitted to the EPA using CEDRI are no longer required to be retained in hard copy, thereby, reducing staff time needed to coordinate these records.

Since the EPA will already have performance test data in hand, another benefit to industry is that fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews will be needed. This would result in a decrease in staff time needed to respond to data collection requests.

State, local, and tribal air pollution control agencies will also benefit from having electronic versions of the reports they are now receiving because they will be able to conduct a more streamlined and accurate review of electronic data submitted to them. For example, the ERT would allow for an electronic review process, rather than a manual data assessment, making review and evaluation of the source provided data and calculations easier and more efficient. In addition, the public will also benefit from electronic reporting of emissions data because the electronic data will be easier for the public to access. How the air emissions data are collected, accessed, and reviewed will be more transparent for all stakeholders.

One major advantage of the proposed submittal of performance test data through the ERT is a standardized method to compile and store much of the documentation required to be reported by this rule. The ERT clearly states what testing information would be required by the test method and has the ability to house additional data elements that might be required by a delegated authority.

In addition, the EPA must have performance test data to conduct effective reviews of CAA section 111 standards, as well as for many other purposes, including compliance determinations, emission factor development, and annual emission rate determinations. In conducting these required reviews, the EPA has found it ineffective and time consuming, not only for us, but also for regulatory agencies and source owners or operators, to locate, collect, and submit performance test data. In recent years, stack testing firms have typically collected performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

A common complaint from industry and regulators is that emission factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, the EPA would be able to ensure that emission factors, when updated, represent the most current range of operational practices. Finally, another benefit of the proposed data submittal to WebFIRE electronically is that these data would greatly improve the overall quality of existing and new emissions factors by supplementing the pool of emissions test data for establishing emissions factors.

In summary, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data would save industry, state/local/tribal agencies, and the EPA significant time, money, and effort while also improving the quality of emission inventories, air quality regulations, and enhancing the public's access to this important information.

#### VII. Rationale for Proposed Alternative Emission Threshold Determination Techniques

The EPA is proposing an emission threshold determination based on site-specific surface emissions monitoring (SEM) that provides flexibility for when a landfill must install and operate a GCCS. If the owner or operator limits landfill surface methane emissions and can demonstrate that those emissions are below 500 ppm methane for 4 consecutive quarters, then the requirement to install a GCCS is not triggered even though estimates using Tiers 1, 2, and/or 3 may show that the landfill's annual NMOC emissions have exceeded the regulatory threshold. In



device is not operating. Landfill owners or operators would keep records of the estimated emissions and would report the information in the annual compliance report.

As discussed above, malfunctions are by definition sudden, infrequent and not reasonably preventable failures of emissions control, process or monitoring equipment. Further, there are myriad different types of malfunctions that can occur and there are significant difficulties associated with predicting or accounting for the frequency, degree, and duration of various malfunctions that might occur. As a result, the EPA believes that it is generally not technically feasible to establish an alternative emission standard that would apply during periods of malfunction. The EPA also believes that it would be difficult to defend an alternative standard that does not achieve a level of emission reduction comparable to that required by the standard that applies during periods of normal operation in circumstances where there are steps that an owner or operator could take to achieve such reductions such as shutting down the process or having a second control device. In the immediate case, by shutting down the flow to the flare or other control device a source is unlikely to be in violation of the 98 percent emission reduction requirement since there will be no gas flowing to the control device. We are, however, interested in comment on whether there are alternative ways in which the emission limit could be complied with when the control device malfunctions.

#### *C. Definitions and Other Rule Changes*

We propose to include definitions of "household waste" and "segregated yard waste" in proposed 40 CFR part 60, subpart Cf to clarify our intent regarding the applicability of proposed subpart Cf to landfills that do not accept household waste, but accept segregated yard waste. We also proposed to exclude construction and demolition waste from the definition of household waste. We intend for subpart Cf to apply to MSW landfills that accept general household waste (including garbage, trash, sanitary waste), as indicated in the definitions. We do not intend the landfills rules to apply to landfills that accept only segregated yard waste or a combination of segregated yard waste and non-household waste such as construction and demolition waste.

### **X. Request for Comment on Specific Provisions**

#### *A. Defining Closed Areas of Open Landfills*

In the ANPRM for the Emission Guidelines (79 FR 41772), the EPA requested input on how non-producing areas of the landfill, *i.e.*, areas that are no longer generating landfill gas, could be excluded from gas collection requirements when designing a GCCS (79 FR 41792). The EPA also sought input on whether the current criteria for capping or removing a GCCS are appropriate, one of which requires that the landfill be closed (79 FR 41783). As discussed in section VIII.B of this preamble, we are proposing a second set of alternative criteria for capping or removing the GCCS at closed landfills or closed areas of active landfills, based on surface emissions monitoring.

Commenters expressed concern with the requirement for closed areas to be physically separated in order to be excluded from GCCS requirements, noting that many closed areas of active landfills are non-producing but remain physically connected to other areas of the landfill.

To help address the difficulty of controlling landfill gas in low-producing areas, the EPA is proposing an alternative set of criteria for capping or removing the GCCS that employs a SEM demonstration: (1) The landfill is closed or an area of an active landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the landfill or closed area demonstrates for 4 consecutive quarters that there are no surface emissions of 500 ppm or greater. The EPA is also requesting comment on whether owners or operators of physically separated, closed areas of landfills may model NMOC emission rates, or may determine the flow rate of landfill gas using actual measurements, to determine NMOC emissions in order to identify areas that can be excluded from gas collection. The EPA considers areas to be physically separated if they have separate liners and gas cannot migrate between the separate areas.

To further address non-producing areas, proposed 40 CFR part 60, subpart Cf contains procedures for excluding areas from gas collection and control. Owners or operators of landfills with physically separated, closed areas may demonstrate that the quantity of NMOC emissions from the area is less than 1 percent of the total NMOC emissions from the entire landfill, and thus exclude the area from control. Under

proposed 40 CFR part 60, subpart Cf, owners or operators of landfills with physically separated, closed areas may model NMOC emission rates, or may determine the flow rate of landfill gas using actual measurements, to determine NMOC emissions. Using actual flow measurements would yield a more precise measurement of NMOC emissions for purposes of demonstrating the closed area represents less than 1 percent of the landfills total NMOC emissions.

Because both of these topics rely on defining a closed area of a landfill, the EPA requests comment on how to define closed areas of open landfills.

#### *B. Enhanced Surface Emissions Monitoring*

The proposed 40 CFR part 60, subpart Cf collection and control requirements are intended to ensure that landfills maintain a tight cover that minimizes any emissions of landfill gas through the surface. The surface emissions monitoring procedures in proposed 40 CFR part 60, subpart Cf are consistent with 40 CFR part 60, subpart WWW and require quarterly surface emissions monitoring to demonstrate that the cover and gas collection system are working properly. However, we are also considering and requesting additional public input on a potential alternative approach to surface emissions monitoring.

The alternative surface monitoring approach includes changing the walking pattern that traverses the landfill from 30 meters (98 ft) to 25 ft and adding a methane concentration limit of 25 ppm as determined by integrated surface emissions monitoring. This would be in addition to the 500 ppm emission concentration as determined by instantaneous surface emissions monitoring. Integrated surface emissions monitoring provides an average surface emission concentration across a specified area. For integrated surface emissions monitoring, the specified area would be individually identified 50,000 square ft grids. A tighter walking pattern and the addition of an integrated methane concentration limit would more thoroughly ensure that the collection system is being operated properly, that the landfill cover and cover material are adequate, and that methane emissions from the landfill surface are minimized in all types of climates. As part of these potential changes, the EPA is also considering not allowing surface monitoring when the average wind speed exceeds 5 miles per hour (mph) or the instantaneous wind speed exceeds 10 mph because air movement can affect whether the





TABLE 4—COMPARISON OF BASELINE SURFACE MONITORING VERSUS ENHANCED SURFACE MONITORING IN 2025—  
Continued

| Control option                                                         | Surface monitoring type                         | Number of landfills controlling | Annual cost | Incremental cost | Total cost per controlled landfill | Incremental cost per controlled landfill |
|------------------------------------------------------------------------|-------------------------------------------------|---------------------------------|-------------|------------------|------------------------------------|------------------------------------------|
| Option 2.5/40 (2.5 million Mg design capacity/40 Mg/yr NMOC).          | No change (30 meter traverse).                  | 636                             | 6,741,000   | 414,000          | 10,600                             | 700                                      |
|                                                                        | Enhanced (25-foot traverse, integrated sample). | .....                           | 46,746,000  | 40,419,000       | 73,500                             | 63,600                                   |
| Proposed Option 2.5/34 (2.5 million Mg design capacity/34 Mg/yr NMOC). | No change (30 meter traverse).                  | 680                             | 7,062,000   | 735,000          | 10,400                             | 1,100                                    |
|                                                                        | Enhanced (25-foot traverse, integrated sample). | .....                           | 49,037,000  | 42,710,000       | 72,100                             | 62,800                                   |

Several factors contribute to the cost of enhanced surface monitoring. Monitoring along a traverse with a 25 ft. interval would increase monitoring time, and thus the labor costs, compared to monitoring along a 30 meter (98 ft.) interval. Monitoring along the tighter traverse pattern would take approximately 4 times as long, because the distance is approximately 4 times greater. For a landfill to conduct the integrated surface emissions monitoring, the EPA assumed the landfill would rent a handheld portable vapor analyzer with a data logger. The data logger is necessary to obtain an integrated reading over a single 50,000 square foot grid. However, the EPA does not expect that requiring an integrated methane concentration would add significant cost because landfills could use the same instrument that they currently use for the instantaneous readings and these instruments can be programmed to provide an integrated value as well as an instantaneous value.

The EPA recognizes that these provisions could reduce surface emissions and that these emissions reductions are difficult to quantify. The EPA also understands that there are potential implementation concerns with these enhanced procedures. Surface monitoring is a labor intensive process and tightening the grid pattern would increase costs. Of the 574 landfills expected to be controlling in 2025 under the baseline, it would take these landfills over 42 hours, on average, to complete each quarterly traverse pattern. Tightening the traverse pattern to 25 ft instead of 30 meters would require over 165 hours per quarter, or nearly 500 additional hours per year, per landfill, compared to the current 30-meter traverse pattern.

At this time, the EPA is not proposing surface monitoring provisions that differ from those outlined in 40 CFR part 60, subpart WWW, but we are soliciting comment on the various elements of

enhanced surface emissions monitoring (the width of the traverse pattern, offsetting the walking pattern each quarter (*i.e.*, offset by 10 meters), an integrated reading of 25 ppm, and restrictions during windy conditions), as well as techniques and data to estimate the emission reductions associated with enhanced surface monitoring.

#### C. Wet Landfills

In the ANPRM (79 FR 41784), we solicited input on separate thresholds for wet landfills and how wet landfills might be defined. Among other concerns, we received feedback from commenters expressing concern on potential overlap between wet landfills handled under the Emission Guidelines and bioreactor landfills handled under 40 CFR part 63, subpart AAAA (National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills). A landfill is defined as a bioreactor under 40 CFR part 63, subpart AAAA if it has added liquids other than leachate into the waste mass in a controlled fashion;<sup>68</sup> such bioreactor landfills are required to install and operate a GCCS on an accelerated schedule compared to non-bioreactor landfills. Once a landfill is required to install and operate a GCCS under either 40 CFR part 63, subpart AAAA, or 40 CFR part 60, subparts WWW and Cc, the GCCS requirements are the same. In addition to bioreactors as defined under 40 CFR part 63, subpart AAAA, the EPA is aware of 31 bioreactor projects permitted under the research, development, and

<sup>68</sup> Under 40 CFR part 63, subpart AAAA, bioreactor means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

demonstration (RD&D) rule in 11 states and one project on tribal lands.<sup>69</sup> These bioreactor landfills generally do not meet the 40 percent by weight moisture component of the bioreactor definition in 40 CFR part 63, subpart AAAA. Based on the options analyzed and presented in Table 3 of this preamble, proposed option 2.5/34 is estimated to achieve reductions of NMOC and methane emissions at 651 existing open landfills in year 2025. Of these 651 landfills, 18 are identified as having RD&D permits, which permit liquids addition; 343 are located in areas receiving greater than 40 inches of precipitation each year; and an additional 16 landfills report leachate recirculation activities and a *k* value of 0.057 year<sup>-1</sup> or greater to subpart HH of the GHGRP, but are not located in areas receiving 40 inches of precipitation or more, for a total of 377 “wet” landfills out of those required to control emissions.

Collectively, reductions from these 377 wet landfills constitute approximately 50 percent of the incremental reductions achieved by the proposed option 2.5/34. Nearly all of these incremental reductions are coming from the 343 landfills that are located in areas receiving 40 inches of precipitation or more. Based on this analysis, the NMOC threshold of 34 Mg/yr in this proposal achieves significant reduction in emissions from wet landfills.

The EPA conducted a preliminary analysis to determine the additional reductions that could be achieved if the initial lag time was shortened by 1 year and the expansion lag time was shortened by 2 years and applied to open wet landfills in addition to the lower NMOC emission threshold of 34 Mg/yr. The results of this analysis show

<sup>69</sup> EPA/600/R-14/335. Permitting of Landfill Bioreactor Operations: Ten Years after the RD&D Rule.

that an additional approximately 220 Mg/yr of reductions in NMOC emissions and 35,200 Mg/yr of reductions in methane (879,000 mtCO<sub>2</sub>e/yr) could be achieved from these 377 wet landfills in 2025.

It is important to note that the impacts of the options in Table 3 as well as this preliminary analysis of wet landfills were conducted using a k value of 0.04 for any landfill that is located in an area with at least 25 inches of rainfall, consistent with the analysis discussed at 79 FR 41805. This modeling parameter was used for all but nine of the 377 wet landfills discussed above. Those nine landfills, which are either RD&D landfills or reported significant leachate recirculation to subpart HH of the GHGRP were modeled using a k value of 0.02 because they were located in arid areas.

The results of the impacts analyses presented in Table 3 of this preamble and above could differ significantly if alternative modeling parameters (k and/or L<sub>0</sub>) were used to model emissions from this group of wet landfills. For example, subpart HH of the GHGRP uses a k value of 0.057 for landfills that exceed 40 inches per year when considering both leachate recirculation and precipitation. The EPA also identified a study containing alternative k values for five different bioreactor landfills.<sup>70</sup> One commenter urged the EPA to consider more representative k values when calculating emission reductions from wet landfills, and cited several studies for EPA review.<sup>71 72 73</sup> This commenter also requested that the EPA adopt shorter lag times for these wet landfills. Another commenter urged the EPA to finalize the changes proposed in 2009 to AP-42 emission factors for MSW landfills, which included a much higher k value of 0.3 for wet landfills, among other changes.<sup>74</sup> Another commenter provided input that leachate recirculation will have negligible impact

on the total precipitation value that ultimately dictates which k value to use. This commenter also referenced its prior comments expressing concerns that the draft AP-42 k value for wet landfills was too high, and provided several studies containing alternative k values for wet landfills.<sup>75 76 77</sup>

Given the additional emission reductions that could be achieved from shortening the lag times at wet landfills and in consideration of the President's Methane Strategy, the EPA is soliciting input on whether the wet landfills not subject to the requirements in 40 CFR part 63, subpart AAAA should be subject to different schedules for installing and expanding their GCCS under the Emission Guidelines. Additionally, the EPA requests comment on how these wet landfills that are not bioreactors (as defined in subpart AAAA) might be defined. Finally, recognizing the wide range of k values used to model emissions at wet landfills (0.057 to 0.3), the EPA requests comment and data to support revising the k value used for assessing the impacts on wet landfills, as well as the k value landfills should use in Tier 1 and Tier 2 emission threshold determinations. The EPA also requests comment on whether revisions to the k value for wet landfills would require changes to the L<sub>0</sub> modeling parameter for wet landfills.

#### D. Monitoring Wellhead Flowrate

Based on comments received and discussed in section VI.B of this preamble, as well as the proposal to eliminate the operating standards for oxygen/nitrogen and temperature, the EPA is requesting input on whether it should add a requirement to monitor wellhead flowrate to help ensure a well-operated GCCS. Monitoring wellhead flow rate would allow the landfill owner or operator to detect low gas flow and whether a well is waterlogged, clogged, or pinched. The EPA is also requesting comment on any other wellhead monitoring parameters that would help ensure a well-operated GCCS.

#### E. Third-Party Design Plan Certification Program

In the ANPRM for existing landfills (79 FR 41784, July 17, 2014), the EPA solicited input on the possibility of establishing a third-party design plan certification program and provided examples of several rules and programs with third-party verification components. The third-party program would supplement or replace the current approach of requiring EPA or state review and approval of site-specific design plans and plan revisions with a program whereby independent third parties would review the design plans, determine whether they conform to applicable regulatory criteria, and report their findings to the approved state programs or the EPA (for states without approved programs). The process of approving site-specific design plans and plan revisions can be extremely resource-intensive for regulators and regulated entities alike. The EPA believes modifying the regulations to provide for the review and approval of the plans by competent and independent third parties could reduce these burdens. Such an independent program would need to be designed to ensure that, among other things, the third parties are competent, accurate, independent, and appropriately accredited. The program would also need to ensure that the reviews are thorough, independent, and conducted pursuant to clear and objective design plan review criteria. Finally, the program would need to ensure that the system is transparent, including requiring appropriate public disclosures, and that there is regular and effective oversight of the third-party system. Some criteria for auditor competence, independence, reporting, and oversight requirements provisions might include the following:

- Engaging a third-party inspection team (team) and submitting the members' resumes and qualifications to EPA;
- Requiring the team to have at least one person with landfill industry expertise acceptable to the EPA, one expert in environmental compliance auditing, and one expert in chemical process safety management;
- Restricting team members to those who have not previously performed work for the respondents;
- Restricting team members from working for the respondents or any of the respondents' officers for 5 years after completion of inspections;
- After giving the respondents notice of the first upcoming inspection, restricting the team from

<sup>70</sup> Barlaz, Morton et al., Performance of North American Bioreactor Landfills II: Chemical and Biological Characteristics. *Journal of Environmental Engineering*, Volume 136, No. 8, August 2010.

<sup>71</sup> Xiaoming Wang et al., *Using Observed Data to Improve Estimated Methane Collection From Select U.S. Landfills*, *Environ. Sci. Technol.* 3251, 3256 (2013).

<sup>72</sup> Hamid R. Amini et al., Comparison of First-Order Decay Modeled and Actual Field Measured Municipal Solid Waste Landfill Methane Data, 33 *Waste Management* 2720, 2725 (2013).

<sup>73</sup> Barlaz et al., Controls on Landfill Gas Collection Efficiency: Instantaneous and Lifetime Performance 59 *J. Air & Waste Mgmt. Ass'n* 1399, 1402-03 (Dec. 2009).

<sup>74</sup> U.S. EPA AP 42, Fifth Edition, Volume I, Chapter 2, Draft Section 2.4: Solid Waste Disposal <http://www.epa.gov/ttn/chief/ap42/ch02/draft/d02s04.pdf>.

<sup>75</sup> Staley, B.F. and M.A. Barlaz, 2009, "Composition of Municipal Solid Waste in the U.S. and Implications for Carbon Sequestration and Methane Yield," *Journal of Environmental Engineering*, Vol. 135, No. 10, October 1, 2009.

<sup>76</sup> U.S. EPA, Landfill Bioreactor Performance, Second Interim Report: EPN600/R-07/060, Office of Research and Development, National Risk Management Laboratory: Cincinnati, OH, 2006.

<sup>77</sup> Tolaymat, T.M., Green, R.B., Hater, G.R., Barlaz, M.A., Black, P., Bronston, D., and J. Powell, "Evaluation of Landfill Gas Decay Constant for Municipal Solid Waste Landfills Operated as Bioreactors." Submitted to the *Journal of the Air & Waste Management Association*, 2009.

## Attachment G

U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills;  
**Supplemental Proposal, 80 Fed. Reg. 52,162 (Aug. 27, 2015)** (excerpts)

*Sufficient extraction rate* means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

*Treated landfill gas* means landfill gas processed in a treatment system as defined in this subpart.

*Treatment system* means a system that filters, de-waters, and compresses landfill gas for sale or beneficial use.

*Untreated landfill gas* means any landfill gas that is not treated landfill gas.

[FR Doc. 2015-20899 Filed 8-26-15; 8:45 am]

BILLING CODE 6560-50-P

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 60

[EPA-HQ-OAR-2003-0215; FRL-9928-96-OAR]

RIN 2060-AM08

### Standards of Performance for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Supplemental proposal.

**SUMMARY:** The Environmental Protection Agency (EPA) is issuing this supplemental proposal for the Standards of Performance for Municipal Solid Waste (MSW) Landfills to address the nonmethane organic compound (NMOC) emission rate threshold at which an affected MSW landfill must install controls. The EPA is in the process of reviewing the Standards of Performance for MSW Landfills based on changes in the landfills industry since the standards were promulgated in 1996 and issued a proposed rulemaking on July 17, 2014. The EPA's review of the Standards of Performance for MSW Landfills (also referred to as the New Source Performance Standards or NSPS for MSW Landfills) applies to landfills that commenced construction, reconstruction, or modification after July 17, 2014.

This document proposes to achieve additional reductions of landfill gas (LFG) and its components, including methane, through a lower emission threshold at which MSW landfills must install and operate a gas collection and control system (GCCS). This document supplements the proposed July 17, 2014, rulemaking by further lowering, from 40 megagrams per year (Mg/yr) to

34 Mg/yr, the proposed NMOC emissions threshold at which controls would be required. This change to the 2014 proposed threshold is based on additional data we have reviewed that indicate greater potential for reductions in methane emissions from these sources than we originally estimated that can be achieved at reasonable cost. Accordingly, the EPA is proposing to establish the NMOC emission rate threshold for installing a GCCS at 34 Mg/yr and is requesting comment specifically on whether this is appropriate. The EPA is also soliciting comment on the number of facilities that might ultimately become subject to proposed new subpart XXX. The EPA intends to consider the information received in response to this supplemental proposal prior to finalizing revised Standards of Performance for MSW Landfills. The EPA is seeking comment only on the two issues addressed by this supplemental proposal and the supplemental proposal does not otherwise reopen the comment period for the July 17, 2014, proposed rule.

**DATES:** *Comments.* Comments must be received on or before October 26, 2015. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before September 28, 2015.

*Public Hearing.* If anyone contacts the EPA requesting a public hearing by September 1, 2015, the EPA will hold a public hearing on September 11, 2015 from 1:00 p.m. (Eastern Standard Time) to 5:00 p.m. (Eastern Standard Time) at the location in the **ADDRESSES** section. If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by September 1, 2015, a public hearing will not take place. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at <http://www.epa.gov/ttnatw01/landfill/landflpg.htm>. Please contact Ms. Aimee St. Clair at (919) 541-1063 or at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov) to register to speak at the hearing. The last day to pre-register to speak at the hearing will be September 8, 2015.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2003-0215, to the *Federal eRulemaking Portal*: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its

public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

*Public Hearing.* If a public hearing is held, it will be at the U.S. Environmental Protection Agency building located at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at <http://www.epa.gov/ttnatw01/landfill/landflpg.htm>.

Please see section I.C of the Supplementary Information for detailed information on the public hearing.

*Docket:* All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, *e.g.*, CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center (EPA/DC), EPA WJC West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The Docket Center is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this supplemental proposal, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143-05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-3154; fax

# Attachment H

Nat'l Waste & Recycling Ass'n, et al., **Petition for Rulemaking, Reconsideration, and Administrative Stay (Oct. 27, 2016)** (excerpts)

Petitioners: National Waste & Recycling Association,  
Solid Waste Association of North America,  
Republic Services, Inc.,  
Waste Management, Inc., and  
Waste Management Disposal Services of Pennsylvania, Inc.

**PETITION FOR RULEMAKING, RECONSIDERATION,  
AND ADMINISTRATIVE STAY**

**DOCKET I.D. EPA-HQ-OAR-2003-0215; EPA-HQ-OAR-2014-0451**

## TABLE OF CONTENTS

|      |                                                                                                                                                     |    |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| I.   | Introduction.....                                                                                                                                   | 1  |
| II.  | Petitioners' Background.....                                                                                                                        | 2  |
| III. | Petition for Rulemaking.....                                                                                                                        | 4  |
| A.   | Overlapping Applicability of Old and New Subparts.....                                                                                              | 5  |
| B.   | Design Plan and Alternatives Approval Process .....                                                                                                 | 11 |
| 1.   | The Final Rules Do Not Ensure Agency Review or Approval of Design Plans.....                                                                        | 12 |
| 2.   | The Final Rules Provide no Clarity on Whether Landfills Must Proceed with GCCS Installation in the Absence of Agency Approval .....                 | 14 |
| 3.   | EPA's Design Plan Approval Process Subjects Affected Facilities to Unclear Compliance Obligations and Untenable Financial and Enforcement Risk..... | 15 |
| 4.   | EPA Must Correct the Rules to Require Affirmative Agency Approval in a Timely Manner.....                                                           | 17 |
| C.   | Non-Producing Areas.....                                                                                                                            | 18 |
| 1.   | The Final Rules Should Allow for the Capping, Removing, and Decommissioning of GCCS From Non-Producing Areas of Active and Closed Landfills .....   | 19 |
| 2.   | EPA's Definition of "Closed Area" Is Needlessly Narrow .....                                                                                        | 20 |
| 3.   | The Final Rules Should Allow for Surface Emission Monitoring to Support Removal or Decommissioning of a GCCS .....                                  | 22 |
| D.   | EPA Should Adopt a Clear Definition of Cover Penetrations.....                                                                                      | 24 |
| IV.  | Petition for Reconsideration .....                                                                                                                  | 26 |
| A.   | Tier 4.....                                                                                                                                         | 28 |
| 1.   | Tier 4 Should Not Be Limited to Landfills With Modeled NMOC Emission Rates Between 34-50 Mg/year.....                                               | 30 |
| 2.   | New Wind-Related Restrictions On Tier 4 Monitoring Are Unsupported .....                                                                            | 31 |
| a.   | Lack of Scientific Basis for Wind-Speed Restrictions .....                                                                                          | 32 |
| b.   | Wind-Speed Restrictions Are Unduly Burdensome .....                                                                                                 | 34 |
| 3.   | Other Tier 4 Issues.....                                                                                                                            | 37 |
| a.   | Tier 4 Monitoring Procedures Should Include Corrective Action.....                                                                                  | 37 |
| b.   | The Final Rules Should Be Clarified to Address When Landfills Are Permitted to Use Tier 4.....                                                      | 39 |
| c.   | The Final Rules Should Be Clarified to Address the Timing of GCCS Installation and Operation for Sources Using Tier 4.....                          | 40 |



|            |                                                                                                                  |    |
|------------|------------------------------------------------------------------------------------------------------------------|----|
| d.         | The Final Rules Should Clarify the Process for Submitting<br>Annual Tier 4 Surface Emission Report .....         | 41 |
| e.         | Tier 4 Recordkeeping Requirements Should Be Reduced.....                                                         | 42 |
| f.         | EPA Failed to Consider the Costs Associated With Tier 4 .....                                                    | 43 |
| B.         | Liquids Addition Reporting .....                                                                                 | 44 |
| 1.         | Annual Reporting Requirement is Unduly Burdensome .....                                                          | 45 |
| 2.         | The Final Rules Should Not Include a Reporting Obligation That<br>is Unrelated to Any Compliance Obligation..... | 47 |
| C.         | Corrective Action Timeline Procedures.....                                                                       | 49 |
| V.         | Petition for Administrative Stay of the Final Rules Pending Judicial Review .....                                | 52 |
| Appendix A |                                                                                                                  |    |

## I. Introduction

On August 29, 2016, the Environmental Protection Agency (“EPA” or “Agency”) promulgated final rules entitled, *Standards of Performance for Municipal Solid Waste Landfills*, 81 Fed. Reg. 59332-59384 (Aug. 29, 2016) (“Subpart XXX”), and *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*, 81 Fed. Reg. 59276-59330 (Aug. 29, 2016) (“Subpart Cf”) (collectively referred to as the “Final Rules”). Prior to publication of the Final Rules, EPA issued the following notices of proposed rulemaking: *Standards of Performance for Municipal Solid Waste Landfills*, 79 Fed. Reg. 41795-41843 (July 17, 2014) and *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Advanced Notice of Proposed Rulemaking*, 79 Fed. Reg. 41771-41793 (July 17, 2014) (collectively referred to as “2014 Proposal”). A year later, EPA issued supplemental proposals, entitled *Standards of Performance for Municipal Solid Waste Landfills*, 80 Fed. Reg. 52162-52168 (Aug. 27, 2015) and *Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills; Proposed Rule*, 80 Fed. Reg. 52100-52162 (Aug. 27, 2016) (collectively referred to as “2015 Supplemental Proposal”). The Final Rules are intended to update existing rules regulating municipal solid waste (“MSW”) landfills – the Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart WWW (“Subpart WWW”) and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart Cc (“Subpart Cc”).

Pursuant to Section 553(e) of the Administrative Procedure Act (“APA”), 5 U.S.C. § 553(e), the National Waste & Recycling Association, the Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc. (collectively referred to as “Petitioners”) request that EPA

immediately undertake a rulemaking to revise the Final Rules, as further specified in Section III, below. Additionally, pursuant to Section 307(d)(7)(B) of the Clean Air Act, 42 U.S.C. § 7607(d)(7)(B) (“CAA” or “Act”), Petitioners request that EPA reconsider certain aspects of the Final Rules, as set forth in Section IV, below. Finally, Petitioners request that EPA immediately grant Petitioners’ request for administrative stay of the Final Rules, as more fully detailed in Section V, below, in order to suspend the effectiveness of the Final Rules and to allow the Agency time to correct the significant substantive and procedural flaws identified in this Petition.

## **II. Petitioners’ Background**

The National Waste & Recycling Association (“NWRA”) is a trade association that represents private-sector waste and recycling companies in the United States, and manufacturers and service providers who do business with those companies. NWRA’s members operate in all 50 states and the District of Columbia. NWRA provides leadership, education, research, advocacy, and safety expertise to promote North American waste and recycling industries, serve as their voice, and create a climate where members prosper and provide safe, economically sustainable, and environmentally sound services.

The Solid Waste Association of North America (“SWANA”) is a California nonprofit public benefit corporation. Its membership includes more than 8,500 public and private sector professionals committed to advancing from solid waste management to resource management through their shared emphasis on education, advocacy and research. For more than 50 years, SWANA has been the leading professional association in the solid waste management field.

Republic Services, Inc.<sup>1</sup> (“Republic”) serves residential, municipal, commercial, and industrial customers nationwide and is dedicated to providing dependable solutions for recycling and waste challenges. Republic provides reliable service through 340 collection operations, 201 transfer stations, 193 active landfills, 67 recycling centers, eight treatment, recovery and disposal facilities, 12 salt water disposal wells, and 69 landfill gas and renewable energy projects across 41 states and Puerto Rico. Republic maintains approximately 125 closed MSW landfills. Republic is a holding company and all operations are conducted by its subsidiaries.

Waste Management, Inc.<sup>2</sup> (“WM”) is North America’s leading provider of integrated waste management and environmental solutions. Through its network of subsidiaries, including Waste Management Disposal Services of Pennsylvania, Inc., WM operates 244 active, solid waste landfills, and at 136 of them, operates beneficial landfill-gas-to energy (“LFGTE”) projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including about 1000 of WM’s own refuse collection trucks. WM maintains approximately 200 closed MSW landfills.

Petitioners have engaged with EPA during the rulemaking period and submitted comments on both the 2014 Proposal and 2015 Supplemental Proposal. *See* NWRA & SWANA, Comments on 2014 Proposal, Docket ID EPA-HQ-OAR-2003-0215-0108 & EPA-HQ-OAR-2014-0451-0062 (“NWRA & SWANA 2014 Comments”); NWRA & SWANA, Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0196 & EPA-HQ-OAR-2014-0451-0186 (“NWRA & SWANA 2015 Comments”); Republic Services, Comments on

---

<sup>1</sup> Republic Services, Inc. is a holding company and all operations are conducted by its wholly-owned and majority-owned subsidiaries. This Petition is being filed by Republic Services, Inc. on behalf of these consolidated subsidiaries (collectively “Republic”).

<sup>2</sup> Waste Management, Inc., a Delaware Corporation, is a holding company and all operations are conducted by its wholly-owned and majority-owned subsidiaries. This Petition is being filed by Waste Management, Inc. on behalf of these consolidated subsidiaries (collectively “Waste Management” or “WM”).

Proposed Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2003-0215-0099 (“Republic 2014 NSPS Comments”); Republic Services, Comments on Supplemental Proposal – Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2003-0215-0202 (“Republic 2015 NSPS Comments”); Republic Services, Comments on the Advanced Notice of Proposed Ruling Making for Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2014-0451-0061 (“Republic 2014 EG Comments”); Republic Services, Comments on Proposed Rules; Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2014-0451-0176 (“Republic 2015 EG Comments”); Waste Management, Inc., Comments on 2014 Proposal, Docket ID EPA-HQ-OAR-2003-0215-0100 & (“WM 2014 Comments”); Waste Management, Inc., Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0198 & EPA-HQ-OAR-2014-0451-0192 (“WM 2015 Comments”). Additionally, WM, Republic, and other industry stakeholders have provided supplemental information relating to implementation of Subparts WWW and Cc, which can be found in the docket for Subpart XXX at the following Docket ID numbers: EPA-HQ-OAR-2003-0215-0003, EPA-HQ-OAR-2003-0215-0007, EPA-HQ-OAR-2003-0215-0053, EPA-HQ-OAR-2003-0215-0055, EPA-HQ-OAR-2003-0215-0057, EPA-HQ-OAR-2003-0215-0058.

### **III. Petition for Rulemaking**

Petitioners ask EPA to initiate rulemaking to address certain aspects of EPA’s Final Rules that were raised in comments at proposal. Under Section 553(e) of the APA, any party can ask any agency to issue, amend, or repeal a rule. 5 U.S.C. § 553(e). Although Section 307(d) of the CAA states that Section 553 of the APA shall not apply to the promulgation or revision of

most nationally-applicable CAA rules, including NSPS or EG rules,<sup>3</sup> the federal courts continue to recognize the right of the public to petition EPA for rulemaking under the CAA.<sup>4</sup>

The Petitioners recognize that the federal courts' authority to review EPA decisions on whether to grant or deny petitions for rulemaking is "extremely limited and highly deferential." *See WildEarth Guardians v. EPA*, 751 F.3d 649 (D.C. Cir. 2014) (denying a challenge to EPA's decision to deny a petition for rulemaking under Section 111 on the basis of ongoing budget uncertainties and limited resources). Nevertheless, Petitioners believe that the Final Rules are fundamentally flawed, are inconsistent with the structure and purpose of Section 111 of the CAA, and therefore warrant revision. Accordingly, Petitioners submit this petition for rulemaking in the hope that EPA will recognize that numerous flaws remain unaddressed, despite timely comments raising those concerns, and initiate a rulemaking process to address them. Since Petitioners believe that the issues for which rulemaking is requested below can be more fully vetted through an official notice and comment rulemaking process, the issues are described here only in general terms. Petitioners look forward to providing greater detail and proposed solutions for the concerns identified below during the rulemaking process. Nevertheless, because Petitioners did comment on the issues identified in this Section III during the rulemaking process for the Final Rule, such issues are also ripe for judicial review. 42 U.S.C. § 307(d).

#### **A. Overlapping Applicability of Old and New Subparts**

In promulgating the Final Rules, the Agency has created an unintelligible web of standards that apply to MSW landfills in contravention of Section 111, consisting of: (1) old

---

<sup>3</sup> 42 U.S.C. § 307(d).

<sup>4</sup> *Massachusetts v. EPA*, 415 F.3d 50, 53 (D.C. Cir. 2005) (noting that Section 307 authorizes judicial review of EPA's decision to deny a petition for rulemaking), *rev'd and remanded on other grounds by* 549 U.S. 497, 527 (2007) (referring to the filing of a petition for rulemaking under the CAA as "procedural right" and confirming that the denial of such a petition may be addressed via judicial review under Section 307). *Accord Friends of the Earth v. EPA*, 934 F. Supp.2d 40, 54 (D.D.C. 2013) ("EPA is required to respond to a citizen petition for rulemaking.") (citing *Massachusetts v. EPA*).

penetrations.” In addition to providing a definition of “cover penetrations,” the Agency must remove the reference to “any openings” in the Final Rules to avoid creating undue confusion.

EPA has recognized that a completely literal interpretation of “cover penetrations” was not intended. Specifically, EPA noted in the preambles to the Final Rules that “[c]over penetrations include wellheads, but do not include items such as survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles.” 81 Fed. Reg. at 59288. EPA also confirmed more broadly in the Response to Comments Document that “cover penetrations” is only intended to include “component[s] of the GCCS system or leachate collection and control system that completely passes through the landfill cover into waste, such as wellheads, leachate risers, and manholes.” Response to Comments Document at 745. This more limited definition of “cover penetrations” is logical—a “cover penetration” should not present a significant emissions concern if it does not reach the waste mass, and most do not, so only those deep enough to reach waste warrant monitoring.

Although EPA’s clarification in the preambles to the Final Rules is helpful and appreciated, Petitioners are concerned that some risk of confusion remains without a codified definition of “cover penetrations.” Therefore, Petitioners respectfully request that EPA convene a rulemaking proceeding to adopt a clear definition of “cover penetrations” into the regulatory text to codify the guidance that EPA has provided in its preambles.

#### **IV. Petition for Reconsideration**

Pursuant to Section 307(d)(7)(B) of the CAA, EPA “shall convene a proceeding for reconsideration of [a] rule and provide the same procedural rights as would have been afforded had this information been available at the time the rule was proposed” so long as the party seeking reconsideration can demonstrate: (1) “that it was impracticable to raise such objection” during the public comment period or that “the grounds for such objection arose after the period

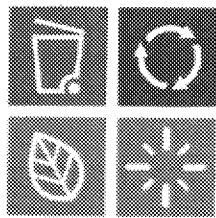
for public comment (but within the time specified for judicial review)”; and (2) “such objection is of central relevance to the outcome of the rule.” 42 U.S.C. § 7607(d)(7)(B). An objection “is of central relevance to the outcome of [a] rule” when that objection “provides substantial support for the argument that the regulation should be revised.” *Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 125 (D.C. Cir. 2012). EPA’s Final Rules present several issues that meet these two criteria. As set forth herein, several aspects of the Final Rules were added after proposal, which fundamentally change the considerations addressed by commenters at proposal and significantly increase the compliance burden and overall impact of the Final Rules. Therefore, EPA must convene a reconsideration proceeding on the issues identified in this Section IV.

In addition, EPA’s Final Rules are unlawful because EPA failed to provide adequate notice of many critical aspects of them. The United States Court of Appeals for the District of Columbia (“D.C. Circuit”) has held that lack of notice claims are subject to the CAA reconsideration process, and so Petitioners raise those claims here as well. *See EME Homer City v. EPA*, 795 F.3d 118, 137 (D.C. Cir. 2015). With regard to the notice that EPA is required to provide in promulgating CAA rules, the D.C. Circuit has consistently held that EPA does not satisfy the Act’s notice and comment requirement when the final rule is not the “logical outgrowth” of the proposed rule. *See e.g. Env’tl. Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005); *Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 951-52 (D.C. Cir. 2004). A requirement in a final rule is the logical outgrowth of a proposed rule only if “interested parties should have anticipated that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period.” *Northeast Maryland Waste Disposal Authority*, 358 F.3d at 952. The “logical outgrowth

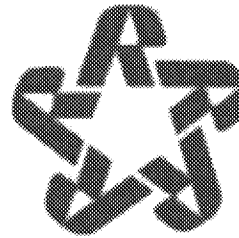
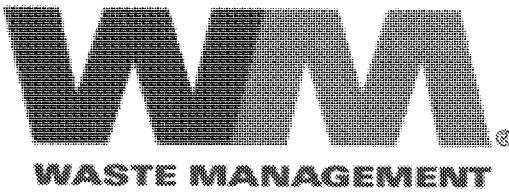


# Attachment I

Nat'l Waste & Recycling Ass'n, et al., Petition for  
Rulemaking, Reconsideration, and Administrative Stay;  
**Resubmission (Jan. 30, 2017)**



**National  
Waste & Recycling  
Association<sup>SM</sup>**  
Collect. Recycle. Innovate.



**REPUBLIC  
SERVICES**

January 30, 2017

Via Overnight Mail

The Honorable Catherine McCabe  
Acting Administrator  
United States Environmental Protection Agency  
Office of the Administrator, Mail Code 1101A  
1200 Pennsylvania Avenue, N. W.  
Washington, DC 20460

Sarah Dunham  
Acting Assistant Administrator  
United States Environmental Protection Agency  
Office of Air and Radiation, Mail Code 6101A  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Kevin Minoli  
Acting General Counsel  
United States Environmental Protection Agency  
Office of General Counsel  
1200 Pennsylvania Avenue, N.W.  
WJC North Building, Suite 4000  
Washington, DC 20460

**RE: Pending Petition for Administrative Reconsideration, Rulemaking, and Stay of the  
Landfill New Source Performance Standards and Emission Guidelines**

Dear Ms. McCabe, Ms. Dunham, and Mr. Minoli,

On October 27, 2016, representatives of the waste management sector (both public and private organizations) asked EPA to reconsider, revise, and stay two climate change related rules promulgated

1682534\_1.docx

Attachments 75

ED\_002691\_00000122-00078

by EPA pursuant to Section 111 of the Clean Air Act that impose revised performance standards on both new and existing municipal solid waste landfills respectively entitled, "*Standards of Performance for Municipal Solid Waste Landfills*," 81 Fed. Reg. 59332-59384 (Aug. 29, 2016), and "*Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*," 81 Fed. Reg. 59276-59330 (Aug. 29, 2016). Both regulations were promulgated as part of President Obama's *Climate Action Plan: Strategy to Reduce Methane Emissions*.

Because we have not received any response from EPA on the petition to date, and in recognition of the recent change in leadership at EPA, we have enclosed the petition for your review. As you will note, the petition identifies numerous and substantial questions of law and policy with the new rules, including the way the rules overlap and conflict with existing rules governing the source category.

We also wanted to draw your attention to similarities that these landfill rules share with other regulations that EPA may reevaluate, in particular EPA's Clean Power Plan and Oil & Gas Rules. For example, the cost-benefit analysis underpinning the landfill rules heavily relies on EPA's "social cost of methane" framework (derived from the Agency's "social cost of carbon" framework) that has been the subject of much debate and criticism. In addition, EPA's new rule for existing landfills relies on the same Section 111(d) authority for which EPA has been heavily criticized in the context of the Clean Power Plan. To the extent that EPA decides to discontinue the Agency's use of the "social cost of methane" or follows a more restrained interpretation of its Section 111(d) authority, EPA should likewise reconsider the landfill rules cited above.

In addition to filing the enclosed administrative petition with the Agency, the petitioners have challenged the new landfill rules in the U.S. Court of Appeals for the D.C. Circuit, and the parties will shortly need to propose a briefing schedule to the Court. Although the petitioners are prepared to proceed with the judicial challenge, we believe that a reconsideration of the rules could lead to an appropriate outcome without the need for litigation. Therefore, we request that EPA grant the enclosed petition and work with the waste management sector to develop a revised rule.

As set forth in the enclosed petition, the petitioners request that EPA issue an administrative stay of the rules using its authority under the Administrative Procedure Act. Although rule revisions are our ultimate goal, a stay is critical to avoid forcing the regulated community and states across the country to begin the process of implementing a set of rules that may ultimately change, which would result in a significant waste of resources. Such a stay would therefore be a particularly cost-effective administrative step, and would also be consistent with the January 20, 2017 directive from Reince Priebus, Assistant to the President and White House Chief of Staff, that all agency and department heads consider proposing for notice and comment a rule to delay the effectiveness of regulations presenting substantial questions of law or policy.

We recognize that many tasks will demand your attention in this time of transition, but hope you will recognize the need for swift action in this case. Fortunately, EPA can quickly and easily eliminate the time pressure with respect to the landfill performance standards by granting the enclosed

petition. Should you have any questions regarding this correspondence, please contact any of the undersigned at your convenience.

Respectfully submitted,

/s/ Kevin J. Kraushaar

Kevin J. Kraushaar  
4301 Connecticut Avenue NW #300  
Washington, D.C. 20008  
(202) 364-3743

*Counsel for National Waste & Recycling Association*

/s/ Barry S. Shanoff

Barry S. Shanoff  
1100 Wayne Avenue, Suite 650  
Silver Spring, Maryland 20910  
(301) 585-2898

*Counsel for Solid Waste Association of North America*



Carol F. McCabe  
MANKO, GOLD, KATCHER & FOX  
401 City Avenue, Suite 901  
Bala Cynwyd, Pennsylvania 19004  
(484) 430-2304

*Counsel for Waste Management, Inc. and Waste Management Disposal Services of Pennsylvania, Inc.*

/s/ Carroll W. McGuffey III

Carroll W. McGuffey III  
M. Buck Dixon  
TROUTMAN SANDERS LLP  
600 Peachtree St. NE, Suite 5200  
Atlanta, Georgia 30308  
(404) 885-3698

*Counsel for Republic Services, Inc.*

cc: Justin Heminger (DOJ) ✓

## Attachment J

**Letter from E. Scott Pruitt, EPA Administrator,**  
to Carroll W. McGuffey, Republic Services, et al. **(May 5, 2017)**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

May 5, 2017

THE ADMINISTRATOR

Mr. Carroll W. McGuffey III  
Mr. M. Buck Dixon  
Counsel for Republic Services  
Troutman Sanders LLP  
600 Peachtree Street NE, Suite 5200  
Atlanta, Georgia 30308

Mr. Barry Shanoff  
Counsel for Solid Waste Association of North America  
1100 Wayne Avenue, Suite 650  
Silver Spring, Maryland 20910

Mr. Kevin J. Kraushaar  
Counsel for National Waste & Recycling Association  
4301 Connecticut Avenue, NW, #300  
Washington, D.C. 20008

Ms. Carol F. McCabe  
Mr. Michael Dillon  
Counsel for Waste Management Inc. and  
Waste Management Disposal Services of Pennsylvania  
Manko, Gold, Katcher & Fox  
401 City Avenue, Suite 901  
Bala Cynwyd, Pennsylvania 19004

RE: Convening a Proceeding for Reconsideration of final rules entitled "Standards of Performance for Municipal Solid Waste Landfills," 81 Fed. Reg. 59332 and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," 81 Fed. Reg. 59276, both published August 29, 2016.

Dear Mr. McGuffey, Mr. Dixon, Mr. Shanoff, Mr. Kraushaar, Ms. McCabe and Mr. Dillon:

This letter concerns a petition from National Waste & Recycling Association, Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc., dated October 27, 2016, to the U.S. Environmental Protection Agency requesting reconsideration, and in some circumstances an administrative stay, of provisions included in the EPA's final rules entitled "Standards of Performance for Municipal Solid Waste Landfills," 81 Fed. Reg. 59332 (August 29, 2016) (i.e. the NSPS), and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills,"

81 Fed. Reg. 59276 (August 29, 2016) (i.e. the emission guidelines), pursuant to section 307(d)(7)(B) of the Clean Air Act.

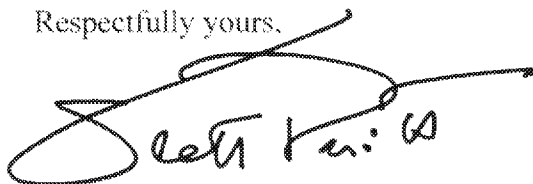
We find, under CAA section 307(d)(7)(B), that the petition has raised several objections to the provisions in both subpart XXX and subpart Cf that arose after the comment period or were impracticable to raise during the comment period and that are of central relevance to the outcome of the rule. Therefore, by this letter the EPA is convening a proceeding for reconsideration of the following topics: 1) tier 4 surface emission monitoring; 2) annual liquids reporting; 3) corrective action timeline procedures; 4) overlapping applicability with other rules; 5) the definition of cover penetration and 6) design plan approval. As part of the reconsideration process, the EPA expects to prepare a notice of proposed rulemaking that will provide an opportunity for notice and comment on the issues raised in the petition that meet the standard of CAA section 307(d)(7)(B), as well as any other matter we believe will benefit from additional comment.

As a result of this reconsideration, the EPA intends to exercise its authority under CAA section 307(d)(7)(B) to issue a 90-day stay of the effectiveness of both the NSPS (subpart XXX) and the emission guidelines (subpart Cf). The EPA believes it is appropriate to stay the effectiveness of both rules in their entirety because the topics listed above are integral to both rules. Sources need not comply with these requirements while the stay is in effect.

This letter does not address other requests for reconsideration raised in this and other petitions. Nor does it address the merits of, or suggest a concession of error on, any issue raised in the petition.

If you have any questions on this action, please contact Mr. Peter Tsigotis in the Office of Air Quality Planning and Standards at (888) 627-7764 or [airaction@epa.gov](mailto:airaction@epa.gov).

Respectfully yours,

A handwritten signature in black ink, appearing to read "E. Scott Pruitt", with a large, stylized flourish extending from the end of the signature.

E. Scott Pruitt

## Attachment K

**Letter from Ann Weeks, Clean Air Task Force, et al.,  
to E. Scott Pruitt, EPA Administrator (June 14, 2017)**



June 14, 2017

Administrator E. Scott Pruitt  
Office of the Administrator, Code 1101A  
Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Request for Withdrawal of Administrative Stay of Landfill Methane Rules

Dear Administrator Pruitt,

The undersigned respectfully request that the Environmental Protection Agency (EPA) withdraw the 90-day Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. 82 Fed. Reg. 24,878 (May 31, 2017). EPA's last-minute stay of these long-overdue protections is contrary to the Clean Air Act (CAA) and arbitrarily overlooks the significant risks to public health and climate that result from a delay in implementing these protections.

As we explain below, EPA lacks legal authority under section 307(d)(7)(B) of the CAA to reconsider and stay the landfills standards. An administrative stay under section 307 must be based on a legitimate reconsideration sought on valid grounds. Reconsideration is only available for objections that were impracticable to raise during the rulemaking comment period, or where the grounds for objection arose after the period for public comment (but within the time specified for judicial review). Those objections must also be of central relevance to the outcome of the rule. 42 U.S.C. § 7607(d)(7)(B). None of the issues EPA has identified for reconsideration meet these standards.<sup>1</sup>

Moreover, EPA's decision to issue the stay fails to even acknowledge the harmful impacts of a delay in implementing these protections. Landfills are among the nation's largest sources of methane, a potent climate pollutant, and they also emit substantial quantities of smog-forming and hazardous air pollutants. Communities across the nation who bear the burden of landfill pollution on a daily basis will be harmed by EPA's unjustified decision to delay these protections—yet EPA gave those concerns no weight at all in its decision.

We also note that the public was at no time given an opportunity to provide input on this decision. Indeed, EPA did not make any public announcement of its decision until more than two weeks *after* the date of EPA's letter granting reconsideration.<sup>2</sup> EPA's lack of transparency and its decision to delay vital safeguards on specious grounds is part of an unfortunate pattern that has emerged under your tenure at EPA. *See, e.g.*, 82 Fed. Reg. 25,370 (June 5, 2017).

---

<sup>1</sup> The Notice of Stay is based on six issues raised in a Petition for Rulemaking, Reconsideration, and Administrative Stay submitted on October 27, 2016, and on a letter from EPA to entities in the waste management industry sent May 5, 2017 in response to that petition. 82 Fed. Reg. 24,878. The six issues identified for reconsideration are: 1) Applicability of the Tier 4 Surface Emissions Monitoring option; 2) Annual Liquids Reporting; 3) Corrective Action Timeline Procedures; 4) Overlapping Applicability with Other Rules; 5) Definition of Cover Penetration; and 6) Design Plan Approval. *Id.* at 24,878-79.

<sup>2</sup> EPA's decision to stay the landfills standards was signed May 22, 2017. 82 Fed. Reg. at 24,879.

1. BECAUSE THERE ARE NOT VALID GROUNDS FOR RECONSIDERATION, THE STAY IS UNLAWFUL

Because none of the six issues listed for reconsideration meet the section 307(d)(7)(B) standard, there is no basis for reconsideration under that provision and EPA has no authority to stay the rules.

For example, the Notice of Stay states that the public had no opportunity to comment on the final rule's restriction of Tier 4 applicability, and that had Tier 4 applicability been finalized differently, it would have been of central relevance to the rule's outcome. 82 Fed. Reg. at 24,879. But in fact, in its rule proposal, EPA requested "input on all aspects of implementing a new Tier 4 option." 79 Fed. Reg. 41,772, 41,791 (July 17, 2014). The final Tier 4 option was formulated in response to the solicited comments and is a logical outgrowth of the proposal.<sup>3</sup>

Likewise, commenters noted—and EPA considered—the possibility of conflicts between the performance standards and a preexisting national emission standard for hazardous air pollutants for the same industry, which involved similar control requirements, 81 Fed. Reg. 59,276, 59,279 (Aug. 29, 2016), an issue which EPA now states was "impracticable" to raise during the comment period.

These examples are typical of the treatment of all issues for which the EPA has now granted reconsideration.<sup>4</sup>

EPA's proposal put stakeholders on notice by providing "reasonably specific[]" descriptions of "the range of alternatives being considered"<sup>5</sup> and explicitly requested comment on the objections on which EPA now purports to grant reconsideration. *See, e.g.*, 80 Fed. Reg. 52,000, 52,126 (Aug. 27, 2015). Unsurprisingly, stakeholders—including those industry representatives who now seek reconsideration—in fact raised those objections during the comment period.

Indeed, of the six issues EPA has announced it is reconsidering, only three were actually included in the request for reconsideration; the other three were listed in support of a petition for further rulemaking.<sup>6</sup> As the parties who sought further rulemaking correctly recognized, any

---

<sup>3</sup> *See* 80 Fed. Reg. 52,100, 52,111 (Aug. 27, 2015) (exploring the possibility of "limit[ing] surface monitoring during windy conditions"); *see also* EPA, Responses to Public Comments on EPA's Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Landfills: Proposed Rules, Dkt. No. EPA-HQ-OAR-2014-0451 [hereinafter "Response to Comments"] at 520, 527-28 (responding to comments expressing support for Tier 4 and proposing an expansion of its use); *id.* at 530, (recommending Tier 4 availability be limited to existing landfills).

<sup>4</sup> *See, e.g.*, EPA, Responses to Comments at 234-42 (describing comments requesting that the Agency not "apply different standards to 'wet landfills'" without further information); *id.* at 995-96, 1013-16 (responding to industry comments on proposed corrective action timelines and providing recommendations); *id.* at 724-26, 734-36 (responding to industry comments expressing disagreement with EPA's interpretation of cover penetration and asking for clarification).

<sup>5</sup> *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 549 (D.C. Cir. 1983).

<sup>6</sup> National Waste and Recycling Association *et al.*, Petition for Rulemaking, Reconsideration, and Administrative Stay (Oct. 27, 2016) (petitioning for further rulemaking to address overlapping applicability of standards, design plan approval process, and clarification of "cover penetrations" definition).

contemplated changes to these final rules regarding those issues must take the form of new rulemaking, not reconsideration. If the prerequisites for reconsideration under section 307(d)(7)(B) are not met, no stay is authorized and existing regulations must remain effective until the completion of a notice and comment rulemaking to modify or replace them.

2. THIS STAY PREVENTS THE REALIZATION OF IMPORTANT ENVIRONMENTAL AND PUBLIC HEALTH BENEFITS

As the third largest source of human-related methane emissions in the U.S., landfills produce dangerous amounts of methane, a highly potent greenhouse gas. Landfills also emit Non-Methane Organic Compounds (NMOC), which include volatile organic compounds (VOC) that form ozone and particulate matter pollution, and hazardous air pollutants (HAPs). Exposure to these pollutants is associated with significant public health and environmental effects, including premature deaths, cardiovascular problems such as heart attacks, respiratory problems such as asthma attacks and bronchitis, and injury to vegetation. HAPs such as benzene and toluene are associated with further serious health concerns. Those who live near landfills thus face elevated risks of all these harms.

EPA's landfill standards were first issued in 1996, and until last year they had not been reviewed or updated in any meaningful way, despite the CAA's requirement that standards of performance for new sources be reviewed and revised at least once every eight years. 42 U.S.C.

§ 7607(b)(1)(B). These long-overdue revisions to the landfill standards represent important steps toward reducing the presence of these pollutants in our air. Merely by lowering the threshold at which a landfill must install Gas Collection and Control Systems (GCCS) to 34 Mg NMOC/year, it is expected that, by 2025, NMOC reductions of almost 2,100 Mg/year and methane reductions of over 320,000 metric tons will be achieved. 81 Fed. Reg. at 59,278-80; 81 Fed. Reg. 59,332, 59,335 (Aug. 29, 2016). The final rule is also expected to result in a reduction of over 300,000 Mg of carbon dioxide (CO<sub>2</sub>) emissions per year. *Id.* Simply put, these rules will result in significant reductions in emissions of climate-destabilizing pollutants and also will avoid negative public health and welfare effects associated with local exposure to these emissions.

The public benefits of implementing these regulations are substantial. When the rules were finalized in 2016, EPA estimated the pollution reduction benefits from them would yield global monetized climate benefits of up to \$1.38 billion by the year 2025. *Id.* The Agency also projected that the monetized climate benefits associated with diminished CO<sub>2</sub> and methane emissions alone would be over \$500 million in 2025. *Id.* Additionally, the annual net benefits of the final rules are projected to be over \$450 million in 2025. *Id.*

Lastly, these rules clarify Surface Emissions Monitoring (SEM) requirements to ensure cover penetrations are inspected regularly. They also closed a loophole that previously allowed landfills to disregard emissions guidelines during periods of startup, shutdown, and malfunction.

The unauthorized and unjustified stay you have imposed delays and diminishes these benefits, and harms public health and the environment.

For these reasons, we respectfully request that the stay of the rules be withdrawn.

Respectfully submitted,

Ann Weeks  
James Duffy  
Clean Air Task Force  
18 Tremont Street, Ste. 530  
Boston, MA 02108  
*Counsel for Clean Air Council, Clean  
Wisconsin, and Conservation Law  
Foundation*

Tomas Carbonell  
Peter Zalzal  
Environmental Defense Fund  
1875 Connecticut Avenue NW, Ste. 600  
Washington, DC 20009

David Doniger  
Melissa Lynch  
Natural Resources Defense Council  
1152 15<sup>th</sup> Street, Ste. 300  
Washington, DC 20005

## Attachment L

**Letter from Ann Weeks, Clean Air Task Force, et al.,  
to E. Scott Pruitt, EPA Administrator (July 10, 2017)**

July 10, 2017

Administrator E. Scott Pruitt  
Office of the Administrator  
Environmental Protection Agency  
Mail Code 1101A  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Second Request for Withdrawal of Administrative Stay of Landfill Methane Rules

Dear Administrator Pruitt,

The undersigned respectfully submit this additional request that the Environmental Protection Agency (EPA) withdraw the 90-day Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 82 Fed. Reg. 24,878 (May 31, 2017), in light of the recent decision in *Clean Air Council v. Pruitt*, No. 17-1145 (D.C. Cir. July 3, 2017) vacating EPA's 90-day stay of certain provisions of the new source performance standards for methane emissions from oil and gas production.

In *Clean Air Council*, the court determined that “industry groups had ample opportunity to comment on all four issues on which EPA granted reconsideration.” Slip op. at 23. “Because it was thus not ‘impracticable’ for the industry groups to have raised such objections during the notice and comment period, CAA section 307(d)(7)(B) did not require reconsideration and did not authorize the stay.” *Id.*

EPA similarly lacks authority to stay the landfills standards. As we discussed in our June 14 letter requesting withdrawal of the administrative stay of the landfill rules (enclosed), none of the issues EPA identified for reconsideration meet the requirements for reconsideration under Clean Air Act section 307(d)(7)(B): issues that are of central relevance to the outcome of the rule, which either were impracticable to raise during the public comment period or arose after that period. In the proposed landfill rules, EPA solicited comment on the issues for which the agency has now granted reconsideration. Stakeholders, including those seeking reconsideration, had the opportunity to raise—and in fact did raise—their objections during the public comment period.

As the prerequisites for reconsideration under section 307(d)(7)(B) are not met, the stay of the landfill rules is not authorized and the existing regulations must remain effective until the completion of a notice and comment rulemaking to modify or replace them. *Clean Air Council*, slip op. at 10-12.

We respectfully request that the stay of the landfill rules be withdrawn in accordance with *Clean Air Council*.

Respectfully submitted,

Ann Weeks  
James Duffy  
Clean Air Task Force  
18 Tremont Street, Ste. 530  
Boston, MA 02108  
Counsel for Clean Air Council,  
Clean Wisconsin, and Conservation Law  
Foundation

David Doniger  
Melissa Lynch  
Natural Resources Defense Council  
1152 15th Street, Ste. 300  
Washington, DC 20005

Enclosure: Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, Administrator, U.S. EPA (June 14, 2017)

CC: Justin D. Heminger, U.S. Department of Justice

## **Attachment M**

**Letter from E. Scott Pruitt, EPA Administrator,  
to David Doniger, Natural Resources Defense Council (July 11, 2017)**





**E. SCOTT PRUITT**  
**ADMINISTRATOR**

July 11, 2017

Mr. David Doniger  
Director, Climate and Clean Air Program  
Natural Resources Defense Council  
1152 15th Street, Suite 300  
Washington, D.C. 20005

Dear Mr. Doniger:

Thank you for your letter of June 14, 2017, in which you requested that the U.S. Environmental Protection Agency withdraw the 90-day stay of the 2016 New Source Performance Standard and Emission Guidelines for the Municipal Solid Waste Landfill Industry.

On May 5, 2017, the EPA granted reconsideration of several issues within the 2016 NSPS and EG. To reduce regulatory burden during this reconsideration period, the EPA issued a 90-day stay of these requirements on May 31, 2017. The May 5, 2017, letter also noted that we intend to look broadly at the entire 2016 NSPS and EG during this reconsideration proceeding.

The EPA will continue to work with stakeholders to ensure the NSPS and EG meet these objectives. We look forward to engaging with you further to discuss these matters.

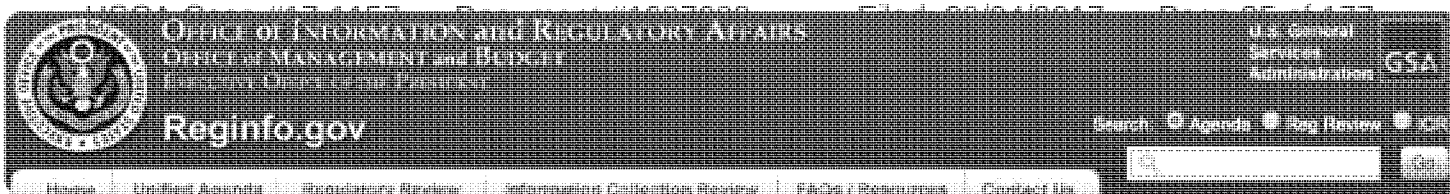
Again, thank you for your letter.

Respectfully yours,

E. Scott Pruitt

## Attachment N

**Office of Management and Budget, Notice** Pending EO 12866 Regulatory Review: Extension of Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)



## View Rule

[View EO 12866 Meetings](#)[Printer-Friendly Version](#)[Download RIN Data in XML](#)

EPA/CAIR

RIN: 2060-AT60

Publication ID: Update 2017

**Title:** »Extension of Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

**Abstract:**

The EPA finalized the Standards of Performance for Municipal Solid Waste Landfills on August 29, 2016 (81 FR 59332) and its companion rule, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, also finalized on August 29, 2016 (81 FR 59276). The EPA received a petition in response to the final rules from industry representatives. The petition raised at least one objection to the rule requirements included in the final rule that arose after the comment period or was impracticable to raise during the comment period and that is of central relevance to the rule. In a letter signed May 5, 2017, the Administrator granted reconsideration and showed intent to stay the rules in their entirety. In a previous action, both the new source performance standards and emission guidelines were stayed for 90 days. The EPA intends to further extend the stay in this action. Sources will not need to comply with any requirements under these rules while the stay is in effect.

**Agency:** Environmental Protection Agency(EPA)**RIN Status:** First time published in the Unified Agenda**Major:** No**CFR Citation:** 40 CFR 60**Legal Authority:** 42 U.S.C. 7411, Clean Air Act**Legal Deadline:** None**Timetable:**

| Action     | Date       | FR Cite |
|------------|------------|---------|
| NPRM       | 06/09/2017 |         |
| Final Rule | 07/09/2017 |         |

**Regulatory Flexibility Analysis Required:** No**Small Entities Affected:** Businesses, Governmental Jurisdictions**Included in the Regulatory Plan:** No**RIN Data Printed in the FR:** No**Related RINs:** Related to 2060-AM08, Related to 2060-AS23**Agency Contact:**

Andrew Sheppard  
Environmental Protection Agency  
Office of Air and Radiation  
E143-03,  
Research Triangle Park, NC 27709  
Phone:919 541-4161  
Email: sheppard.andrew@epa.gov

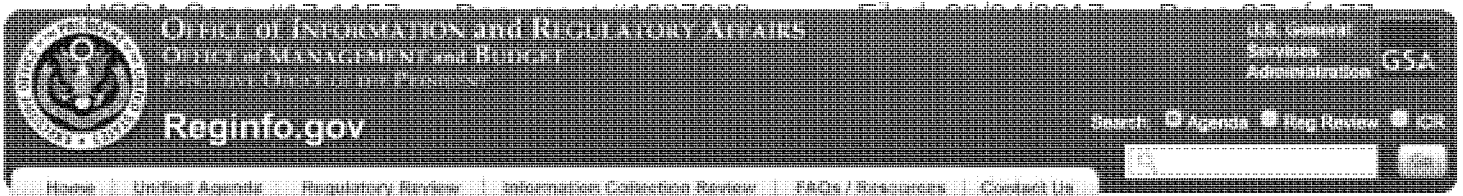
**Robin Dunkins**

Environmental Protection Agency  
Office of Air and Radiation  
E143-03,  
Research Triangle Park, NC 27711  
Phone:919 541-5335  
Fax:919 541-3470  
Email: dunkins.robin@epa.gov

**Priority:** Substantive, Nonsignificant**Agenda Stage of Rulemaking:** Proposed Rule Stage**Unfunded Mandates:** No**Government Levels Affected:** Local, State, Tribal**Federalism:** No
[About Us](#) | [Related Resources](#) | [Disclosures](#) | [Accessibility](#) | [Privacy Policy](#) | [Contact Us](#)


## Attachment O

**Office of Management and Budget, Notice** Pending EO 12866 Regulatory Review: Stay of Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)



## View Rule

[View EO 12866 Meetings](#)[Printer-Friendly Version](#)[Download RIN Data in XML](#)

EPA/OAR

RIN: 2060-AT64

Publication ID: Update 2017

Title: «Stay of Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

Abstract: The EPA finalized the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, on August 28, 2016 (81 FR 59276). The EPA received a petition in response to the final rule from industry representatives. The petition raised at least one objection to the rule requirements included in the final rule that arose after the comment period or was impracticable to raise during the comment period and that is of central relevance to the rule. In this action, the EPA intends to further extend the stay in this action. Sources will not need to comply with these requirements while the stay is in effect.

Agency: Environmental Protection Agency(EPA)

Priority: Other Significant

RIN Status: First time published in the Unified Agenda

Agenda Stage of Rulemaking: Proposed Rule Stage

Major: No

Unfunded Mandates: No

CFR Citation: 40 CFR 60

Legal Authority: 42 U.S.C. 7411 Clean Air Act

Legal Deadline:

| Action | Source | Description | Date |
|--------|--------|-------------|------|
| None   |        |             |      |

Timetable:

| Action     | Date       | FR Cite |
|------------|------------|---------|
| NPRM       | 06/00/2017 |         |
| Final Rule | 08/00/2017 |         |

Regulatory Flexibility Analysis Required: No

Government Levels Affected: Local, State, Tribal

Small Entities Affected: No

Federalism: No

Included in the Regulatory Plan: No

RIN Data Printed in the FR: No

Agency Contact:

Peter Tsirigotis

Environmental Protection Agency

Office of Air and Radiation

6204J, 109 T.W. Alexander Drive, Mail Code D205-01,

Research Triangle Park, NC 27711

Phone:888 627-7764

Email: alraction@epa.gov

[About Us](#) | [Related Resources](#) | [Disclosures](#) | [Accessibility](#) | [Privacy Policy](#) | [Contact Us](#)


## **Attachment P**

**Declaration of Gina Trujillo, Natural Resources Defense Council**

## DECLARATION OF GINA TRUJILLO

I, Gina Trujillo, do hereby affirm and state:

1. I am the Director of Membership for the Natural Resources Defense Council (NRDC). I have held this position since January 2015. I previously served as NRDC's Director of Member Development and Member Services for over nine years.

2. My current duties at NRDC include supervising the preparation of materials that NRDC distributes to members and prospective members. Those materials describe NRDC and identify its mission. In my previous position, I supervised the maintenance and updating of NRDC's membership database, which is a listing of those persons who are members of NRDC.

3. NRDC is a membership organization incorporated under the laws of the State of New York. It is recognized as a not-for-profit corporation under Section 501(c)(3) of the United States Internal Revenue Code.

4. NRDC currently has more than 346,000 members nationwide. NRDC has members in all fifty states and the District of Columbia.

5. When an individual becomes a member of NRDC, the member authorizes NRDC to take legal action on his or her behalf to protect the environment and public health.

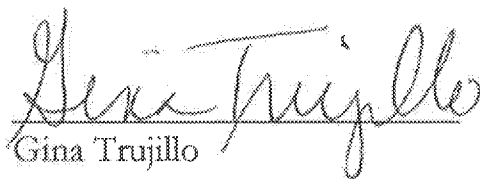
6. NRDC's mission statement declares that "The Natural Resources Defense Council's purpose is to safeguard the Earth: its people, its plants and animals, and the natural systems on which all life depends." NRDC's mission includes the

prevention and mitigation of global climate change in order to protect and maintain NRDC's members' use and enjoyment of natural resources threatened by climate change.

7. Through its Climate and Clean Air Program, NRDC pursues federal and state policies to curb air pollution and limit emissions of the pollutants that are causing climate change. NRDC seeks to reduce emissions of methane from municipal solid waste landfills, which are the nation's second largest industrial source of methane.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on: 7/27/17

  
Gina Trujillo



# **Attachment Q**

**Declaration of Joseph O. Minott, Clean Air Council**

**UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

Philadelphia County                                 )  
                                                                      )  
Commonwealth of Pennsylvania                 )

**DECLARATION OF JOSEPH O. MINOTT**

I, Joseph O. Minott, hereby declare and state as follows:

1.     This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Clean Air Council's ("CAC") Petition for Review in the above-referenced matter.

2.     I am currently the Executive Director of CAC and have served in this position for thirty (30) years. Before serving as Executive Director I was a staff attorney at CAC for four years. My position at CAC requires me to be responsible for achieving CAC's goals and mission, and to be familiar with CAC's structure, activities and membership.

3.     The, Clean Air Council, originally named The Delaware Valley Citizen's Council for Clean Air, was established in 1967. CAC is a 501(c)(3) non-profit, membership organization incorporated in Pennsylvania and

headquartered at 135 South 19<sup>th</sup> Street, Suite 300, Philadelphia, Pennsylvania 19103.

4. CAC currently has nearly 8,000 members, in the Mid-Atlantic regions, most of whom live in the Philadelphia, Pennsylvania area.

5. CAC works to achieve its mission, to protect everyone's right to breathe clean air, through advocacy and legal action. Among CAC's programmatic activities is its "Global Warming Program." CAC's work on this issue began in 2001 when it convened the Mid-Atlantic States Conference on Climate Change. Specifically, CAC works for strong state and federal policies to address climate change pollution, including defending the U.S. Environmental Protection Agency's ("EPA's") authority to regulate greenhouse gas emissions under the Clean Air Act. CAC's climate change work includes a focus on steps to ameliorate the public health damages due to a warmer climate and rising sea levels.

6. My position at CAC requires me to be up to date and knowledgeable about current and future threats to the environment in Pennsylvania, and more broadly, to the Mid-Atlantic region in which Pennsylvania is centrally located.

7. Among the most important current and future threats to Pennsylvania's natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of the science documenting the existence of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment – specifically to the natural and built environment in the Mid-Atlantic region. I understand that human activities, including the burning of fossil fuels to generate electric power, and production of waste, have resulted in elevated levels of carbon dioxide and methane pollution. Carbon dioxide, methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that “greenhouse effect” is now causing a variety of climactic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including increased precipitation and heavy downpours in northern United States.

8. I understand that 2016 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in my region. Between 1895 and 2011, average annual temperatures in Pennsylvania, indeed the entire Northeast U.S., increased by almost two degrees Fahrenheit and precipitation increased by more than ten percent.

9. Additionally, I know that global sea levels are projected to rise one to four feet by 2100; a rise of two feet, without any changes in storms, would more than triple the frequency of coastal flooding in the Mid-Atlantic, including along the Schuylkill River, the largest tributary of the Delaware River, which enters the Atlantic Ocean in southern New Jersey. The Schuylkill River in Philadelphia is tidal, with a six-foot tidal range, meaning that water levels are six feet higher at high tide than at low tide.

10. I know also that Philadelphia, as a modern large city, has significantly more impermeable surfaces, such as concrete and asphalt, and less vegetation than surrounding areas, and therefore suffers from a “heat island” effect, whereby average temperatures are several degrees warmer than in the surrounding regions. The “heat island” effect poses a direct health risk because extreme heat events can cause health problems including heat exhaustion, heat stroke, and even death, particularly among at-risk populations such as

children, the elderly, or those with low socio-economic factors. The “heat island” effect also contributes to greater concentrations of ground-level ozone, or smog, which forms when warm polluted air mixes with sunlight. Hotter areas experience higher localized concentrations of ground-level ozone than cooler areas. Smog is a particular problem in urban areas because of the increased presence of vehicles and industry, as well as the “heat island” effect.

11. Smog irritates the respiratory system, reduces lung function, inflames and damages cells that line your lungs, makes your lungs more susceptible to infections, aggravates asthma, aggravates chronic lung disease, and can cause permanent lung damage. Increasing temperatures associated with climate change will exacerbate smog and associated health problems. CAC’s members residing in the Philadelphia region are experiencing the effects of summer smog now and this will continue and intensify if greenhouse gas accumulations in the atmosphere remain unchecked and average temperatures continue to rise.

12. I also know that climate change results in more frost-free days and can contribute to shifts in flowering time and pollen initiation from allergenic plants. Increases in carbon dioxide itself can elevate plant-based allergens, resulting in longer and more intense allergy seasons.

13. I am familiar with the final rule at issue in this litigation: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. In my opinion, and based on my experience at CAC and with this rulemaking, the final Guidelines, which were stayed, were a significant step forward in reducing greenhouse gas emissions in the United States and confirm the country's international leadership in the global effort to address climate change, and the stay will undermine these benefits.

14. Guidelines for existing landfills were originally promulgated in 1996. This updated rulemaking reflects a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas that causes 86 times more warming than CO<sub>2</sub> in the short-term. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e by 2025.

15. Greenhouse gases are neither hazardous air pollutants nor criteria pollutants and therefore must be regulated under section 111(d). Emission control technology, efficiency, and operational control innovations and development are occurring at a rapid rate. It is imperative to climate change

mitigation that EPA's authority to update section 111(d) emission guidelines be upheld.

16. In addition to my professional role at CAC, I also have been a CAC member for over twenty (20) years. I am sixty-three (63) years old. I own the property at which I live, located at 2301 Cherry Street, 4J, Philadelphia, Pennsylvania 19103, in Philadelphia County. I have been a resident of Philadelphia or its suburbs for forty-four (44) years.

17. My property is located less than one block from the Schuylkill River and is in a high-risk flood area according to the U.S. Federal Emergency Management Agency. I am aware that increased global temperatures cause increased flooding on tidal rivers like the Schuylkill, due to a combination of sea level rise, storm surge, and extreme precipitation events. Because my property is low-lying and within close proximity to a major river, it is vulnerable to damage from such flooding.

18. Indeed, it is my personal impression that strong storms and flooding events on the Schuylkill have increased in recent years. When my wife and I purchased our condominium four years ago, we thought it would be a beautiful home overlooking the river. Now, we are concerned about our investment because twice in the last few years the river came up over its banks and flooded the basement, garage and elevator shafts of the condominium



complex, rendering them inaccessible. I am concerned that climate change will increase these flooding incidents and undermine our comfort and investment in our home.

19. I suffer from a chronic medical condition called sarcoidosis, which causes shortness of breath, wheezing, and chest pain. The symptoms of sarcoidosis are aggravated by ground-level ozone. I am therefore directly impacted by climate change because increased temperatures lead to more frequent bad ozone days which exacerbate my medical condition.

20. Further, I do not own a car, so I walk around Philadelphia on a daily basis. I also enjoy running, sitting outdoors, and spending time on the patio and roof of my apartment building. More frequent and intense bad ozone days will make it harder for me to breathe when I attempt to walk and exercise outdoors, and will force me to curtail these activities. More frequent and intense bad ozone days are already occurring in Philadelphia and likely to increase if climate change-related temperature increases remain unchecked.

21. I also suffer from seasonal allergies in the spring, due to increased pollen in the air at that time of year. My symptoms include runny eyes, stuffy nose, headache and a “spacey” feeling. Among the effects of climate change in the Mid-Atlantic region is a lengthening of the allergy season, which already is causing me to suffer from these symptoms more often.

22. I have children and two small grandchildren; one who is almost two years old and one who is five years old. They visit me in Philadelphia often and are an important reason why I am so concerned about the issue of climate change. I worry about how the changing climate will impact their futures and believe we must do everything we can to protect them from its effects.

23. The Guidelines at issue in the above-referenced matter will be a significant step toward addressing climate change and its effect on rising waters, increasing bad ozone, allergens, and our children's future planet. I believe the Guidelines will also make the air that I, my children and my grandchildren breathe cleaner and safer.

24. I understand that EPA recently issued a three-month delay of these landfill rules, and that Clean Air Council has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 26th day of July 2017.

A handwritten signature in black ink, appearing to read 'Joseph O. Minott', written over a horizontal line.

Joseph O. Minott  
2301 Cherry Street, 4J  
Philadelphia, PA 19103

## **Attachment R**

**Declaration of Kathryn A. Nekola, Clean Wisconsin**

**UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

Dane County                    )  
                                      )  
State of Wisconsin            )

**DECLARATION OF KATHRYN A. NEKOLA**

I, Kathryn A. Nekola, hereby declare and state as follows:

1.     This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Clean Wisconsin's Motion to Intervene in Support of Respondents, in the above-referenced matter.

2.     I am the General Counsel for Clean Wisconsin, where I have served for 12 years. In my current position, I lead the organization's legal program, including matters related to climate and energy policies. Due to my current position and my previous experience, I am knowledgeable about Clean Wisconsin's mission, and about how energy policy and climate change impacts the state of Wisconsin, including impacts to public health, natural resources and the built environment.

3.     Clean Wisconsin, founded as Wisconsin's Environmental Decade, was established in 1970. Clean Wisconsin is a 501(c)(3) non-profit, membership

organization incorporated in Wisconsin and headquartered at 634 West Main Street, Suite 300, Madison, Wisconsin 53703.

4. Clean Wisconsin currently has 6,000 members in the Midwest region most of whom live in the state of Wisconsin.

5. Clean Wisconsin works to achieve its mission through education, advocacy, and legal action to protect Wisconsinites' right to breathe clean air and drink clean water. Among Clean Wisconsin's current programmatic activities is its Global Warming Program, and programmatic work to protect clean air and promote clean energy has been a continual focus of the organization since its beginning in 1970. Specifically, Clean Wisconsin is helping to ensure that Wisconsin's economy stays strong and is powered by clean, safe, reliable energy as Clean Wisconsin works for strong state and federal policies to address climate change pollution, including defending the U.S. Environmental Protection Agency's (EPA's) authority to regulate greenhouse gas emissions under the Clean Air Act.

6. Clean Wisconsin has engaged in solid waste disposal and management policies and landfill regulation for most of its 46-year history. Our former Policy Director served on the "Governor's Task Force on Waste Materials Recovery and Disposal" under Governor Doyle in 2005-06; our Government Relations Director currently serves on the Wisconsin Department of Natural Resources' Waste Materials and Management Working Group; and our Executive

Director serves on the Dane County Solid Waste and Recycling Commission (which deals directly with the management of the Dane County landfill). I am currently a member of the Wisconsin Department of Natural Resources' Technical Working Group to reevaluate and revise an administrative rule pertaining to the beneficial reuse of industrial waste.

7. I understand that this lawsuit challenges an EPA final rule entitled: "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills" ("Guidelines").

8. Guidelines for existing landfills were originally promulgated in 1996. This rulemaking reflects a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas that causes 86 times more warming than CO<sub>2</sub> in the short-term. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e in 2025.

9. I understand that human activities, and the decomposition of waste in particular, have resulted in elevated levels of methane pollution in the atmosphere. I am well aware that methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that the "greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited

to, increased temperatures, sea level rise, longer and more severe droughts, and increases in the frequency and intensity of extreme weather events including increased intensity in precipitation events. I am also aware that the increase in average temperatures tends to be higher in the interior of large continents such as North America, and that has been the case in the Midwestern portion of the United States. I understand that 2014 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in the Midwest.

10. I am also aware that in 2014 landfills were the third-largest anthropogenic source of methane emissions in the United States, with municipal solid waste landfills accounting for approximately 18.2 percent of the total methane emissions from all sources. Significant methane generation can continue for 10 to 60 years after initial waste placement.

11. I am aware that rigorous analysis shows that under the expert International Panel on Climate Change's (IPCC's) scenario A1B (that is, the model showing more reductions in greenhouse gas emissions than is the case under the status quo in the United States), there is a 90 percent likelihood that the annual mean temperatures in Wisconsin will rise to somewhere between 3 and 9 degrees Fahrenheit above 1980 levels by the year 2055. I am aware that this analysis also shows that there is a 90 percent likelihood that the annual mean temperature in



Wisconsin will rise to somewhere between 5 and 13 degrees Fahrenheit above 1980 levels by the year 2090, and that the number of days that the daytime high will exceed 90 degrees Fahrenheit is likely to increase by 20 (over 1980 levels) by 2055. I am also aware that the number of rainfall events in excess of 2 inches is likely to increase by 6 days per decade by the year 2055.

12. I am further aware that the impacts of these and other changes in the climate are already being experienced in Wisconsin as a result of human-induced global warming due to methane and other greenhouse gas emissions. Climate change warming patterns will produce further serious harmful impacts to Wisconsin's natural environment, built environment, and public health over the coming centuries. I know that in Wisconsin droughts are already more frequent and will become more severe and longer in duration; that rain and storm events, while occurring less frequently, are now and will become more intense and severe. I know that warming is now having, and will continue to have the greatest impact during the winter months, resulting in less consistent snow cover and more icy conditions. I know that in Wisconsin cities, which have more paved and built-up surfaces and less vegetation than in rural areas, a heat island effect is now causing and will lead to even more severe hot-weather days.

13. I know that insect-borne diseases such as Lyme disease are already spreading into regions of the country (including areas in Wisconsin) where they

previously had not occurred due to warming winters that no longer kill off the insect hosts; and that Lyme disease will continue to spread, and the season when ticks are able to transmit the disease to humans will continue to lengthen, unless something is done to reduce climactic warming. I know that the incidence and intensity of ozone smog is already increasing and will continue to increase, and ozone smog seasons will lengthen in Wisconsin, with increased temperatures that drive the chemical reaction that forms ground-level ozone. I know that streams and rivers in Wisconsin already are warming, and this will greatly reduce the range and incidence of native cold-water fisheries in Wisconsin, especially brook trout.

14. I know that higher summer temperatures are already causing stress to dairy cows and increase the cost of producing quality milk, which is vital to the economic health of Wisconsin's dairy industry, one of the country's most important sources of milk and other dairy products. I know that because rainfall events are both less frequent but more intense when they do occur, both droughts and flooding are increasing, and this situation is already adding risk and expense to many types of Wisconsin crop farming including grains, fruits, vegetables, herbs, and livestock feed. I know that shorter snow-cover durations resulting from increases in winter thaws are now and will continue to have major impacts on the tourism industry in Wisconsin and increase costs for Wisconsin's timber industry.

15. I know that it is critical to adapt to these changes and that adaptation will come at a great cost to Wisconsin's economy; moreover, it is also critical to take steps now to reduce methane and other air pollution that causes climate change in order to mitigate those costs. I know that the combined costs of the impacts of climate change and the costs of adapting to minimize those impacts, will be far higher than the cost of mitigating the impacts, particularly from the largest sources such as municipal solid waste landfills.

16. In addition to my professional role with Clean Wisconsin I have also been a dues paying member of Clean Wisconsin for the past 12 years. I am 62 years old, and have been a resident of the state of Wisconsin most of my life. I have two daughters.

17. I am and have been an enthusiastic hiker, biker, and swimmer all of my life. I grew up in northwestern Wisconsin and spend many weekends every year in Douglas, Bayfield, and Sawyer Counties, camping, swimming, and hiking. I also hike and bike in southern Wisconsin and I am aware that plant, bird, and animal habitat, which I enjoy viewing on my walks and bike trips, are affected by global climate change. I am also aware that the increased incidence of tick-borne illnesses such as Lyme Disease have been attributed to global warming, and have myself suffered from Lyme Disease as a result of recreating in Wisconsin forests. Due to my professional work, I am aware that, unless we take significant steps to

reduce current levels of greenhouse gas emissions, Wisconsin's lakes, streams, and forests will be irreversibly altered in ways that will affect habitats, the prevalence of infectious disease, and recreational opportunities. This will be a great personal loss to me and will forfeit recreational opportunities for my daughters. Just as importantly, it will be a major economic and cultural blow to the state of Wisconsin.

18. My daughters both share my love for the outdoor recreational opportunities Wisconsin offers, and I am aware that their lives and their children's lives will be affected even more profoundly – in a negative way – than ours, by climate change impacts to Wisconsin. This fact, more than anything else, is my motivation for working to address climate change and mitigate its impacts on Wisconsin.

19. Municipal solid waste landfills also emit non-methane organic compounds, which include volatile organic compounds, a precursor to ozone and particulate matter, and hazardous air pollutants. Volatile organic compounds can cause eye, nose and throat irritation, headaches, nausea or damage to the liver, kidneys and nervous system. Ozone can cause lung and throat irritation and trouble breathing during exertion. Exposure to particulate matter can cause lung and heart damage. People exposed to hazardous air pollutant have an increased chance of getting cancer or experiencing other serious health effects such as immune system

damage, as well as, neurological, reproductive, developmental and respiratory health problems.

20. I work in downtown Madison, Wisconsin, less than 5 miles from the Dane County Landfill Site, located at 7102 East Broadway, Madison, Wisconsin. This site emitted 52,459 tons of CO<sub>2</sub> equivalent in 2015. Also in 2015, it emitted 63 tons of particulate matter and over 25 tons of hazardous air pollutants. I drive past the landfill site almost daily and am aware of the odor that emanates from it.

21. I recreate near the Dane County Landfill including biking and hiking on the Glacial Drumlin Bike Trail in Cottage Grove Wisconsin, approximately three miles from the Dane County Landfill, and hiking around Upper Mud Lake and Lake Waubesa, approximately four miles from the Dane County Landfill. Each autumn, my family picks apples at the Door Creek orchard, which is three miles from the Dane County Landfill.

22. Compliance with the Guidelines will, as a co-benefit, reduce emissions of hazardous air pollutants, ozone and particulate matter.

23. The Guidelines are a significant step toward addressing climate change and its effect on Wisconsin's air quality, lakes, rivers, ground water, farms, businesses, public health, culture and heritage. I believe the Guidelines will also make the air that I, my children, and my grandchildren breathe cleaner and safer. Clean Wisconsin seeks to intervene on EPA's behalf to defend the Guidelines. I

support EPA's promulgation of the Guidelines finalized by the Agency, and I support Clean Wisconsin's efforts to intervene on EPA's behalf.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 12th day of July 2017:

Kathryn A. Nekola  
Kathryn A. Nekola  
430 W. Main Street, Apt. 307  
Madison, WI 53703

# **Attachment S**

**Declaration of Sara Molyneaux, Conservation Law Foundation**





three states and the District of Columbia, with the largest concentrations in the New England region.

4. CLF's mission is to work to solve the most significant environmental challenges facing New England. CLF relies on sound science and uses the law to create and advocate for innovative strategies to conserve natural resources, protect public health, and promote vital communities in our region. Working to promote effective climate change policies, including defending the U.S. Environmental Protection Agency's ("EPA's") authority to regulate greenhouse gas emissions under the Clean Air Act, constitutes a core element of CLF's mission.

5. My role at CLF requires me to be up-to-date and knowledgeable about current and future threats to the environment in Massachusetts, and more broadly, to the New England region.

6. Among the most important current and future threats to Massachusetts' natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of the science documenting the existence of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment – specifically to the natural and built environment in the New England region. I understand that human activities, especially burning fossil fuels to generate electric power, have resulted in elevated levels of carbon dioxide pollution. Carbon dioxide and other greenhouse gases trap

heat in the Earth's atmosphere that would otherwise escape, and that "greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including increased precipitation and heavy downpours in the northern United States.

7. I understand that 2016 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in my region. Between 1895 and 2011, average annual temperatures in Massachusetts, indeed the entire Northeast United States, increased by approximately two degrees Fahrenheit, and precipitation increased by more than ten percent. I understand that sea level rise is already documented in Massachusetts and that global sea levels are projected to rise one to four feet by 2100, substantially increasing coastal flooding risks in my region.

8. I know that urban areas, such as the Greater Boston metropolitan area in Massachusetts, have significantly more impermeable surfaces, including concrete and asphalt and less vegetation than surrounding areas, and therefore suffer from a "heat island" effect, whereby average temperatures are several degrees warmer than in the surrounding regions. The "heat island" effect poses a direct health risk because extreme heat events can cause health problems, including heat exhaustion, heat stroke, and even death, particularly among at-risk

populations, such as children, the elderly, or those with low socio-economic factors. This “heat island” effect also contributes to greater concentrations of ground-level ozone, which forms when warm polluted air mixes with sunlight. Hotter areas experience higher localized concentrations of ground-level ozone than cooler areas. In turn, ground-level ozone combines with particulate matter to create smog. Smog is a particular problem in urban areas because of the increased presence of vehicles and industry, as well as the “heat island” effect.

9. Ozone smog irritates the respiratory system, reduces lung function, inflames and damages cells that line lungs, makes lungs more susceptible to infections, aggravates asthma, aggravates chronic lung disease and can cause permanent lung damage. Increasing temperatures associated with climate change will exacerbate ground-level ozone and ozone smog and associated health problems. CLF’s members residing in urban areas experience the effects of smog, which will continue and intensify if greenhouse gas accumulations in the atmosphere remain unchecked and average temperatures continue to rise.

10. I know that climate change results in more frost-free days and can contribute to shifts in flowering time and pollen initiation from allergenic plants. Increases in carbon dioxide itself can elevate plant-based allergens, resulting in longer, more intense allergy seasons.

11. I am familiar with the final rule at issue in this litigation: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. In my opinion, and based on my experience at CLF and with this rulemaking, the final Guidelines stayed by this rule, are a significant step forward in reducing greenhouse gas emissions in the United States and confirm the country's international leadership in the global effort to address climate change.

12. Guidelines for existing landfills were originally promulgated in 1996. The Guidelines which have been stayed in this rulemaking reflect a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas with a much shorter atmospheric lifespan than CO<sub>2</sub>. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e in 2025.

17. CLF's members live and recreate in areas throughout New England that are now, and will be in the future, impacted by climate change, rendering them at risk for the adverse public health effects of climate change. CLF's members also include persons owning property and recreating in coastal areas that have already experienced sea level rise, as well as the accompanying erosion, direct loss of coastal property, and compromised wetland areas. CLF's members further include

elderly persons and others living in urban areas with high concentrations of ground-level ozone, making them particularly vulnerable to the adverse health impacts associated with exposure to these elevated concentrations.

18. In addition to my role at CLF, I have been a resident of Massachusetts for 39 years. I live at 7 Wilsondale Street in Dover, which is located in Norfolk County. My husband and I own property at 581 and 595 Old Post Road in Cotuit, which is located in Barnstable County on Cape Cod. My property in Cotuit is located on the waterfront and is in a high-risk flood area according to the U.S. Federal Emergency Management Agency. I am aware that increased global temperatures cause increased flooding, due to a combination of sea level rise, storm surge, and precipitation events. Because my property is within close proximity to the Atlantic Ocean, it is vulnerable to damage from such flooding.

20. My husband of thirty-six years is a native New Englander and suffers from chronic asthma, which causes shortness of breath, wheezing, coughing, and chest pain. These symptoms are aggravated by ground-level ozone and ozone smog. My husband is, therefore, directly impacted by climate change because increased temperatures lead to more frequent bad ozone days, exacerbating his symptoms.

21. My husband enjoys spending time outdoors and participating in recreational activities. Based on the heightened frequency and intensity of bad

ozone days, my husband has been forced to curtail these activities. If climate-related temperature rises remain unchecked, these bad ozone days will only continue to increase, and the associated adverse health impacts will be compounded.

22. I have two children living in New England. They are an important reason why I am so concerned about the issue of climate change. I worry about how the changing climate will impact their health and their futures. I believe we must do everything we can to protect them from climate changes' adverse effects.

23. The Guidelines at issue in the above-referenced matter will be a significant step toward addressing climate change and its effect on rising waters, increasing bad ozone, allergens, and our children's future planet. I believe the Guidelines will also make the air that I, my children, and my grandchildren breathe cleaner and safer.

24. I understand that EPA recently issued a three-month delay of the Guidelines, and that CLF has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 16<sup>th</sup> day of July, 2017.

  
Sara Molyneaux  
7 Wilsondale Street  
Dover, MA 02030

# **Attachment T**

**Declaration of Craig Gooding**, Natural Resources Defense Council Member



## DECLARATION OF CRAIG GOODING

I, Craig Gooding, do hereby affirm and state:

1. I am currently a member of the Natural Resources Defense Council (NRDC). I have been a member since 2007.
2. I support NRDC's work to protect public health and the environment from the hazards associated with air pollution from municipal solid waste landfills, both in terms of direct threats to our health and impacts on our climate.
3. My wife and I live in Charleston, South Carolina. We have lived in our current home, which is in a relatively recently developed neighborhood, for six years. I was stationed in Beaufort, South Carolina in the 1990s, during which time I was frequently in Charleston and the surrounding area. I have lived in the area off and on since then.
4. My home is less than a mile east of the Charleston County Landfill. The landfill is in the middle of a rapidly developing residential area, including a new development with as many as 6,000 units immediately adjacent to the landfill. Due to the explosive population growth in the Charleston metro area, the landfill is accepting increasing amounts of waste.
5. It is my understanding that the Charleston County Landfill does not currently utilize any method of controlling its emissions of air pollutants.

6. I understand that landfill emissions include hazardous air pollutants and other pollutants that contribute to smog. I am concerned about the health effects that these air pollutants emitted by the landfill may have on the local community.

7. On clear nights when the wind comes from the west, a strong unpleasant odor from the landfill reaches my home. This occurs roughly once every two weeks. The odor is an oily, chemical smell. Although to my knowledge there is not an incinerator in use at the landfill, the smell resembles burning trash or tires. I believe that the landfill is the source of the odor because it occurs when the wind comes from the direction of the landfill, and it is the only industrial source in that direction—the rest of the area to the west of my home is residential and wetlands.

8. I am concerned about the pollutants that may be associated with the odor. When the smell is strong, my wife and I try to avoid breathing the air—we close up the windows in our house, and do not sit on our screened-in porch or otherwise go outdoors. I worry about the impacts of breathing the air on my own health, and I am concerned about the impacts on my neighbors, many of whom are families with young children.

9. I understand that landfill emissions also include methane and carbon dioxide, both of which are greenhouse gases that contribute to climate change. I am deeply concerned about the effects climate change will have, and is already having, on the Charleston area. Downtown Charleston is barely above sea level, and the surrounding area is a sunken river delta that is now full of tidal creeks and rivers. The

area is vulnerable to hurricanes and storm surge, and has become more vulnerable over time due to sea level rise, which is driven by climate change.

10. Having spent time in Charleston over the last twenty years, I have seen the effects of sea level rise first-hand: roads around Charleston that never flooded twenty years ago now frequently flood during twice-monthly spring tides (associated with a full moon or new moon). I am an avid kayaker, and spend time kayaking all over the Charleston area in the ocean, harbor, and tidal creeks and rivers. From this vantage point I can see just how much of the area is at risk of flooding, and how much more will be at risk in the future due to sea level rise.

11. I also have significant concerns about other environmental impacts of the landfill. I kayak in the wetlands to the west of the landfill, and I worry about the possible impacts of pollution from the landfill on the natural area. Additionally, there is constant and increasing local traffic from hundreds of trucks transporting waste to the landfill, and the additional air pollution associated with those trucks.

12. I am aware that in 2016 the U.S. Environmental Protection Agency updated its regulations to expand the number of landfills that must control their landfill gas emissions. I support these updated regulations, as they would likely require the Charleston County Landfill to install new controls to limit its air pollution in the near future. I believe these regulations should be fully implemented.


13. I understand that EPA recently issued a notice putting the landfill rules on hold, and that NRDC has initiated a lawsuit to challenge that delay. I support this

lawsuit, because EPA's regulations will reduce the air pollution from the landfill in my community and from the landfills in many other communities around the country. I believe that my wife's and my health, the health of our neighbors, and the future of Charleston and similarly vulnerable coastal cities, would all be better protected if these rules are implemented immediately.

14. I fully support NRDC in this action.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on July 26, 2017.



---

Craig Gooding

## **Attachment U**

**Declaration of Susan Almy**, Conservation Law Foundation Member

**UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

Grafton County                    )  
                                          )  
State of New Hampshire )

**DECLARATION OF SUSAN ALMY**

I, Susan Almy, hereby declare and state as follows:

1.     This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Conservation Law Foundation’s (“CLF”) Petition for Review, in the above-referenced matter

2.     I am currently serving my eleventh term as a Representative of Grafton County District 13, the City of Lebanon, in the New Hampshire House of Representatives. I am also a member of CLF.

3.     Among the most important current and future threats to New England’s natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment—specifically in New England. I understand that human activities have resulted in elevated levels of greenhouse gas pollution in the atmosphere. Methane and other greenhouse gases trap heat in the Earth’s atmosphere that would otherwise escape, and that

“greenhouse effect” is now causing a variety of climatic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including warmer winters, reduced snowfall, earlier spring runoff, increased total rainfall, and more frequent violent storms and short-term droughts in New England.

4. I understand that there is part of a pattern of increased warming globally and in my region. I also understand that sea level rise is already documented in New Hampshire and that projected sea level rise over the course of this century will substantially increase coastal and riverine flooding, erosion, and property damages risks in my state. The increased frequency and violence of extreme weather events have already severely impacted the housing stock, businesses, roads, and jobs of my state and our neighboring state, Vermont. Additionally, climate change threatens the viability of industries that contribute significantly to my state’s economy, including New Hampshire’s ski areas, snowmobiling industry, transportation, fisheries, and agricultural and forestry sectors. These industries are not only key to New Hampshire’s economic success but also important the state’s cultural heritage and history.

5. As a long-term member of the New Hampshire Ways and Means Committee, I am attuned to the impacts of climate change on New Hampshire’s economy. I know that it is critical to adapt to the impacts of climate change and

that adaptation will come at a cost to New Hampshire's economy; moreover, it is also critical to take steps now to reduce methane and other air pollution that causes climate change in order to mitigate those costs. I know that the combined costs of the impacts of climate change and the costs of adapting to minimize those impacts, will be far higher than the cost of mitigating the impacts, particularly from large sources such as municipal solid waste landfills.

6. I am also a member of the City of Lebanon Conservation Commission and the Lebanon Steering Committee on the Implementation of the Master Plan, , and I was a member of the Grafton County Executive Committee and the Upper Valley Housing Coalition for many years. Climate change has impacted my work in these positions. The City of Lebanon Conservation Commission has had to deal with many instances of severe erosion and river pollution due to high-intensity storms that have become more frequent in recent years. The Upper Valley Housing Coalition became a leader in immediate response to flooding to save flooded houses. My city saw considerable jobs and property lost in Tropical Storm Irene. Lebanon is now the center for a regional discussion of sustainability measures that municipalities must take to protect against climatic changes and extreme weather events, which burden municipal budgets already strained by stormwater separation mandates and the downshifting of costs from the state and federal government.



My county powers all of its heating and cooling with renewable energy resources, and my city is pursuing multiple avenues to reduce its own carbon footprint.

7. I understand that this lawsuit challenges an EPA final rule entitled: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills.

8. I understand that the stay will delay Guidelines which would reduce landfill emissions of methane and other dangerous and hazardous air pollutants that can cause serious health effects.

9. I have been a dues paying member of CLF since 2014. I am 71 years old, and I own the property where I live at 266 Poverty Lane, Unit 4B, Lebanon, New Hampshire. I have been a resident of the state of New Hampshire for 23 years, and was domiciled here through my parents during my two decades of work overseas before that. I have no children, but I have two great-nieces.

10. I have chronic asthma, which causes shortness of breath, wheezing, coughing, and chest pain. These symptoms are aggravated by air pollution. I have trouble visiting parts of my state and nation when air pollution peaks in a region. I am directly impacted by methane emissions because such emissions contribute to the formation of ozone smog, which aggravates asthma.

11. I live approximately 2 miles from the Lebanon Landfill and Recycling Center (the "Landfill"), located at 370 Plainfield Road, Route 12-A, West

Lebanon, New Hampshire. This site emits methane and other dangerous and hazardous air pollutants. In recent years, the Landfill has made efforts to reduce its emissions, including through installation of a flare system to burn the Landfill's collected methane emissions.

12. The Landfill is located at the edge of a shopping site, which is among the most popular commercial destinations in my region. A long strip mall and a mini-golf and putting green cover most of a closed cell of the Landfill. I visit the mall or the surrounding area most weeks. Until the Landfill starting flaring its landfill gas, the smell of landfill gas was pervasive during large parts of the year. Despite flaring, the smell of landfill gas is still noticeable to me sometimes, especially when I am driving past the Landfill to access the nearby recycling center or when I am visiting towns located to the south and downwind of the Landfill.

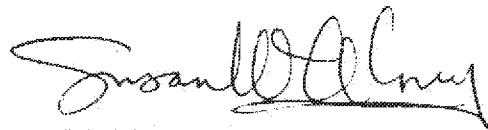
13. The Guidelines impose critical reporting requirements on the Landfill. These reporting requirements are particularly important because the Landfill's current design capacity is not far below the capacity that would trigger emission control requirements under the Guidelines. It is important to me, and I believe my community, to ensure that our regional landfill is properly regulated and guided in accord with up-to-date science and information. Furthermore, the Guidelines' enhanced reporting requirements will ensure transparency and allow for public involvement.

14. The Guidelines are a significant step toward addressing climate change and its effect on New Hampshire's natural resources, businesses, public health, culture, and heritage. I believe the Guidelines will also make the air that I breathe cleaner and safer.

15. I understand that EPA recently issued a three-month delay of the Guidelines, and that CLF has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 18<sup>th</sup> day of July 2017:



Susan Almy  
266 Poverty Lane 4B  
Lebanon, New Hampshire  
03766

# **Attachment V**

**Declaration of Douglas I. Foy, Conservation Law Foundation**



CLF's membership consists of approximately 4,600 individuals, residing in thirty-three states and the District of Columbia, with the largest concentrations in the New England region.

4. CLF's mission is to work to solve the most significant environmental challenges facing New England. CLF relies on sound science and uses the law to create and advocate for innovative strategies to conserve natural resources, protect public health, and promote vital communities in our region. Working to promote effective climate change policies, including defending the U.S. Environmental Protection Agency's ("EPA's") greenhouse gas emissions regulations under the Clean Air Act, constitutes a core element of CLF's mission.

5. My role at CLF requires me to be up-to-date and knowledgeable about current and future threats to the environment in Massachusetts, and more broadly, to the New England region.

6. Among the most important current and future threats to Massachusetts' natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of the science documenting the existence of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment – specifically to the natural and built environment in the New England region. I understand that human activities, including creation and decomposition of waste have resulted in elevated levels of

methane pollution. Methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that "greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including increased precipitation and heavy downpours in the northern United States.

7. I understand that 2016 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in my region. Between 1895 and 2011, average annual temperatures in Massachusetts, indeed the entire Northeast United States, increased by approximately two (2) degrees Fahrenheit, and precipitation increased by more than ten (10) percent. I understand that sea level rise is already documented in Massachusetts and that global sea levels are projected to rise one to four feet by 2100, substantially increasing coastal flooding risks in my region.

8. I know that urban areas, such as Boston, Massachusetts, have significantly more impermeable surfaces, including concrete and asphalt and less vegetation than surrounding areas, and therefore suffer from a "heat island" effect, whereby average temperatures are several degrees warmer than in the surrounding regions. The "heat island" effect poses a direct health risk because extreme heat events can cause health problems, including heat exhaustion, heat stroke, and even

death, particularly among at-risk populations, such as children, the elderly, or those with low socio-economic factors. This “heat island” effect also contributes to greater concentrations of ground-level ozone, which forms when warm polluted air mixes with sunlight. Hotter areas experience higher localized concentrations of ground-level ozone than cooler areas. In turn, ground-level ozone combines with particulate matter to create smog. Smog is a particular problem in urban areas because of the increased presence of vehicles and industry, as well as the “heat island” effect.

9. Ozone smog irritates the respiratory system, reduces lung function, inflames and damages cells that line lungs, makes lungs more susceptible to infections, aggravates asthma, aggravates chronic lung disease and can cause permanent lung damage. Increasing temperatures associated with climate change will exacerbate ground-level ozone and ozone smog and associated health problems. CLF’s members residing in urban areas are experiencing the effects of summer smog now, which will continue and intensify if greenhouse gas accumulations in the atmosphere remain unchecked and average temperatures continue to rise.

10. I know that climate change results in more frost-free days and can contribute to shifts in flowering time and pollen initiation from allergenic plants.



Increases in carbon dioxide itself can elevate plant-based allergens, resulting in longer, more intense allergy seasons.

11. I am familiar with the final rule at issue in this litigation: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. In my opinion, and based on my experience at CLF and with this rulemaking, the final Guidelines are a significant step forward in reducing greenhouse gas emissions in the United States and confirm the country's international leadership in the global effort to address climate change.

12. Guidelines for existing landfills were originally promulgated in 1996. The Guidelines which have been stayed in this rulemaking reflect a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas with a much shorter atmospheric lifespan than CO<sub>2</sub>. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e in 2025.

17. CLF's members live and recreate in areas throughout New England that are now, and will be in the future, impacted by climate change, rendering them at risk for the adverse public health effects of climate change. CLF's members also include persons owning property and recreating in coastal areas that have already

experienced sea level rise, as well as the accompanying erosion, direct loss of coastal property, and compromised wetland areas. CLF's members further include elderly persons and others living in urban areas with high concentrations of ground-level ozone, making them particularly vulnerable to the adverse health impacts associated with exposure to these elevated concentrations.

18. In addition to my role at CLF, I have been a resident of Massachusetts for 46 years. I am 70 years old. I live at 40 Battery Street, in Boston, which is located in Suffolk County. I have lived at this address for 13 years. I also own property at 65 East India Row, in Boston, which is located in Suffolk County.

19. Both my home and my property are located on the waterfront and are in high-risk flood areas according to the U.S. Federal Emergency Management Agency. I am aware that increased global temperatures cause increased flooding, due to a combination of sea level rise, storm surge, and extreme precipitation events. Because my home and my property are within close proximity to Boston Harbor, they are vulnerable to damage from such flooding.

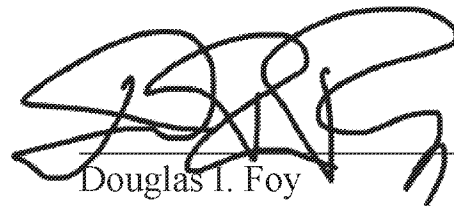
20. I have children, as well as two granddaughters ages one and four, living in the Boston area and visiting me regularly. They are an important reason why I am so concerned about the issue of climate change. I worry about how the changing climate will impact their health and their futures. I believe we must do everything we can to protect them from the adverse effects of climate change.

21. The Guidelines at issue in the above-referenced matter will be a significant step toward addressing climate change and its effect on rising waters, increasing bad ozone, allergens, and our children's future planet. I believe the Guidelines will also make the air that I, my children, and my grandchildren breathe cleaner and safer.

22. I understand that EPA recently issued a three-month delay of the Guidelines, and that CLF has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 30th day of July, 2017.

A handwritten signature in black ink, appearing to read 'Douglas I. Foy', is written over a horizontal line.

Douglas I. Foy  
40 Battery Street  
Boston, MA 02109

## Attachment W

U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; **Advanced Notice of Proposed Rulemaking**,  
**79 Fed. Reg. 41,771 (July 17, 2014)** (excerpts)

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2014-0451; FRL-9913-51-OAR]

RIN 2060-AS23

**Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills**

**AGENCY:** Environmental Protection Agency.

**ACTION:** Advanced Notice of Proposed Rulemaking.

**SUMMARY:** The purpose of this Advanced Notice of Proposed Rulemaking (ANPRM) is to request public input on methods to reduce emissions from existing municipal solid waste (MSW) landfills. The Environmental Protection Agency (EPA) intends to consider the information received in response to the ANPRM in evaluating whether additional changes beyond those in the proposed revisions for new sources are warranted. MSW landfill emissions are commonly referred to as "landfill gas" or "LFG" and contain methane, carbon dioxide (CO<sub>2</sub>), and nonmethane organic compounds (NMOC). Some existing landfills are currently subject to control requirements in either the landfill new source performance standards (NSPS) or the federal or state plans implementing the landfill emission guidelines; both the NSPS and emission guidelines were promulgated in 1996. The EPA believes that these guidelines merit review to determine the potential for additional reductions in emissions of LFG. Such reductions would reduce air pollution and the resulting harm to public health and welfare. Significant changes have occurred in the landfill industry over time, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. The ANPRM recognizes changes in the population of landfills and presents preliminary analysis regarding methods for reducing emissions of LFG. In determining whether changes to the emission guidelines are appropriate, the EPA will, in addition to evaluating the effectiveness of various methods for reducing emissions of LFG, consider the total methane emission reductions that can be achieved in addition to the reductions of NMOC emissions. The EPA is also seeking input on whether it should regulate methane directly. The ANPRM also addresses other regulatory issues including the definition of LFG treatment systems and requirements for

closed areas of landfills, among other topics.

**DATES:** *Comments.* Comments must be received on or before September 15, 2014.

**ADDRESSES:** Submit your comments, identified by Docket ID Number EPA-HQ-OAR-2014-0451, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- *Email:* [A-and-R-Docket@epa.gov](mailto:A-and-R-Docket@epa.gov). Include Docket ID No. EPA-HQ-OAR-2014-0451 in the subject line of your message.
- *Fax:* (202) 566-9744. Attention Docket ID No. EPA-HQ-OAR-2014-0451.
- *Mail:* Environmental Protection Agency, EPA Docket Center (EPA/DC), Mailcode 28221T, Attention Docket ID No. EPA-HQ-OAR-2014-0451, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.
- *Hand/Courier Delivery:* EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue NW., Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

**Instructions:** Direct your comments to Docket ID No. EPA-HQ-OAR-2014-0451. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute.

Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. Send or deliver information identified as CBI to only the mail or hand/courier delivery address listed above, attention: Mr. Roberto Morales, OAQPS Document Control Officer (Room C404-02), U.S. EPA, Research Triangle Park, NC 27711, Attention Docket ID No. EPA-HQ-OAR-2014-0451. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless

you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

**Docket:** All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically at <http://www.regulations.gov> or in hard copy at the Air Docket, EPA/DC, WJC West Building, Room B102, 1301 Constitution Ave. NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this ANPRM, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (OAQPS) (E143-05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-3154; fax number: (919) 541-0246; email address: [ward.hillary@epa.gov](mailto:ward.hillary@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**Acronyms and Abbreviations.** The following acronyms and abbreviations are used in this document.

ACT Alternative compliance timeline  
 ANPRM Advanced Notice of Proposed Rulemaking  
 AR4 IPCC Fourth Assessment Report  
 ARB Air Resources Board  
 BMP Best management practice  
 CAA Clean Air Act  
 CBI Confidential business information  
 CFR Code of Federal Regulations  
 CO<sub>2</sub> Carbon dioxide

percent or an oxygen level less than 5 percent. Compliance with these requirements is demonstrated through monthly monitoring. Instead of having the landfill owner or operator conduct monthly monitoring of temperature and nitrogen/oxygen at the wellheads, the EPA is requesting input on relying on landfill surface emission monitoring requirements in combination with maintenance of negative pressure at wellheads to indicate proper operation of the GCCS and minimization of surface emissions. The potential removal of the temperature and nitrogen/oxygen operational standards and associated wellhead monitoring requirements for these three parameters would be complemented by the addition of the surface monitoring provisions discussed in section IV.D.2 of this document.

Given recent technological advancements in data storage and transmission, the EPA is also considering an alternative to automate the wellhead monthly monitoring provisions. Automation could reduce long-term burden on landfill owner/operators as well as state authorities by allowing for more frequent, but less labor-intensive, data collection through the use of a system consisting of remote wellhead sensors (i.e., thermistors, electronic pressure transducers, oxygen cells) and a centralized data logger.

The use of continuous monitoring would allow more immediate detection and repair. This would eliminate the time between when the exceedance of the parameter occurs and when it is detected. It could also improve enforceability of the rule by allowing inspectors to review information on the data logger in real time during a site visit. Another advantage to automating the monitoring is that it could provide flexibility for incorporating additional parameters into the monitoring program. The EPA is soliciting input on this alternative in general, including: (1) The types of parameters that are best suited for an automated monitoring alternative; (2) examples of successful automated monitoring programs at MSW landfills and their associated costs; (3) additional considerations for equipment calibration; and (4) input on any averaging times that might be appropriate to determine when one or more monitored parameters have been exceeded.

## 2. Surface Emissions Monitoring

The EPA is requesting input on potential alternative approaches to the surface emission monitoring specified in 40 CFR part 60, subpart WWW. Subpart WWW collection and control

requirements are intended for landfills to maintain a tight cover that minimizes any emissions of LFG through the surface. The surface emissions monitoring procedures in subpart WWW require quarterly surface emissions monitoring to demonstrate that the cover and gas collection system are working properly. The operational requirements in subpart WWW (40 CFR 60.753(d)) specify that the landfill must "... operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover."

Subpart WWW of 40 CFR part 60 includes provisions for increased monitoring and corrective procedures if readings above 500 ppm are detected. Instrumentation specifications, monitoring frequencies, and monitoring patterns are structured to provide clear and straightforward procedures that are the minimum necessary to assure compliance.

We are requesting public input on potential alternatives to the surface monitoring procedures in 40 CFR part 60, subparts Cc and WWW. Potential alternatives could include provisions such as those in the California landfill methane regulation<sup>93</sup> and include changing the walking pattern for inspecting the surface of the landfill, adding an integrated methane concentration measurement, and allowing sampling only when wind is below a certain speed.

We are requesting input on reducing the interval for the walking pattern that traverses the landfill from 30 meters (98 ft.) to 25 ft. We are also requesting input on the addition of an average methane concentration limit of 25 ppm as determined by integrated surface emissions monitoring. This would be in addition to the 500 ppm emission concentration as determined by instantaneous surface emissions monitoring. Integrated surface emissions monitoring provides an average surface emission concentration across a specified area. For integrated surface emissions monitoring, the specified area would be individually identified 50,000

square foot grids. A tighter walking pattern and the addition of an integrated methane concentration would more thoroughly ensure that the collection system is being operated properly, that the landfill cover and cover material are adequate, and that methane emissions from the landfill surface are minimized. As part of these potential changes, the EPA is also requesting input on not allowing surface monitoring when the average wind speed exceeds 5 miles per hour or the instantaneous wind speed exceeds 10 miles per hour because air movement can affect whether the monitor is accurately reading the methane concentration during surface monitoring. We are considering this change because measurements during windy periods are usually not representative of emissions.

We are also soliciting information and associated data on the cost and assumptions for conducting enhanced surface monitoring as described here. Several factors contribute to the cost of enhanced surface monitoring. Monitoring along a traverse with a 25 ft. interval would increase monitoring time, and, thus, the labor costs, compared to monitoring along a 30 meter (98 ft.) interval. Monitoring along the tighter traverse pattern would take approximately four times as long, because the distance is approximately four times when covering a 50,000 square foot grid. For a landfill to conduct the integrated surface emissions monitoring, the EPA assumes the landfill would rent a handheld portable vapor analyzer with a data logger. The data logger would be necessary to obtain an integrated reading over a single 50,000 square foot grid. However, the EPA does not expect that requiring an integrated methane concentration would add significant cost because landfills could use the same instrument that they currently use for the instantaneous readings. These instruments can be programmed to provide an integrated value as well as an instantaneous value.

The EPA recognizes that while these provisions could minimize surface emissions, the actual reduction in emissions is difficult to quantify. Surface monitoring is a labor intensive process and tightening the grid pattern would increase costs. Thus, the EPA is soliciting input on techniques and data to estimate the reductions associated with enhanced surface monitoring.

The EPA is also requesting input on allowing the use of alternative remote measurement and monitoring techniques for landfills that exceed the surface monitoring concentrations in 40 CFR part 60, subpart Cc. The EPA

<sup>93</sup> California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, sections 95460 to 95476, Methane Emissions from Municipal Solid Waste Landfills.

would like information to determine whether to allow these alternative techniques to be used to demonstrate that surface emissions are below the specified methane surface concentrations. Alternative remote measurement and monitoring techniques may include radial plume mapping (RPM), optical remote sensing, Fourier Transform Infrared (FTIR) spectroscopy, cavity ringdown spectroscopy (CRDS), tunable diode laser (TDL), tracer correlation, micrometeorological eddy-covariance, static flux chamber or differential absorption. The EPA is also seeking input on the frequency of testing and the format of the standard if we allow the use of these technologies as an alternative to average surface concentrations as measured by Method 21. Incorporation of these technologies would require a change in format of the standard to be consistent with the technology.

### 3. Alternative Monitoring Provisions for LFG Treatment

The EPA is requesting input on defining treatment system as a system that filters, dewateres and compresses LFG. This alternative approach would be consistent with public commenters on previous landfills documents (67 FR 36475, May 23, 2002; 71 FR 53271, September 8, 2006). It is also consistent with input from participants in governmental outreach, who stated that the extent of filtration, de-watering and compression can be site dependent, and that different sites require different levels of gas treatment to protect the combustion devices that use treated LFG as a fuel and ensure good combustion. The alternative definition of treatment system would allow the level of treatment to be tailored to the type and design of the specific combustion equipment in which the LFG is used. If treatment system was defined in this manner, owners/operators would need to identify monitoring parameters and keep records that demonstrate that such parameters effectively monitor filtration, de-watering or compression system performance necessary for the end use of the treated LFG.

Owners/operators would also need to develop a site-specific treatment system monitoring plan that would not only accommodate site-specific and end-use specific treatment requirements for different energy recovery technologies, but would also ensure environmental protection. Preparing the monitoring plan would document procedures that landfills are likely already following to ensure that the LFG has been adequately treated for its intended use.

The plan would be required to include monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. The plan would be required to include monitoring methods, frequencies and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for the intended end use of the treated LFG. Documentation of the monitoring methods and ranges, along with justification for their use, would need to be included in the site-specific monitoring plan. In the plan, the owner/operator would also need to identify who is responsible (by job title) for data collection, explain the processes and methods used to collect the necessary data, and describe the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.

The owner or operator would be required to revise the monitoring plan to reflect changes in processes, monitoring instrumentation and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime. The EPA requests input on the definition of treatment system and the creation of site-specific treatment system monitoring plans.

### 4. Monitoring and Reporting Flexibility

Regulatory agencies and landfill owners and operators have expressed concerns about the burden and response time of agencies responsible for reviewing and approving design plans, Alternative Compliance Timeline (ACT) requests, alternative remedies and higher operating value (HOV) requests.

One way to minimize the need for such reviews would be to provide more flexibility in wellhead monitoring provisions, as described in section IV.D.1 of this document.

The EPA also solicits input on other ways to streamline the monitoring, reporting and notification provisions as part of its review of the emission guidelines. For example, currently the subparts Cc and WWW of 40 CFR part 60 require site-specific design plan review and approval procedures, recognizing the unique site-specific topography, climate and other factors affecting the design of a GCCS. However, the EPA solicits input on ways to streamline the design plan submission and approval procedures as part of its review of the emissions

guidelines. Examples of streamlining may include the potential development of a process by which approved alternative operating parameters could be automatically linked to updates of design plans or development of a process by which alternative operating parameters and updated design plans could be approved on a similar schedule.

The EPA is also seeking input on the possibility of establishing a third-party design plan certification program. The third-party program would supplement or replace the current approach of requiring the EPA or state review and approval of site-specific design plans and plan revisions with a program by which independent third parties would review the design plans, determine whether they conform to applicable regulatory criteria, and report their findings to the approved state programs or the EPA (for states without approved programs). The program would be designed to ensure that the third-party reviewers are competent, independent, and accredited, apply clear and objective criteria to their design plan reviews, and report appropriate information to regulators. Additionally, there would need to be mechanisms to ensure regular and effective oversight of third-party reviewers by the EPA and/or states that may include public disclosure of information concerning the third parties and their performance and determinations. Utilizing a third-party certification program could help to standardize and expedite design plan reviews, and reduce the burden on state regulators. The EPA is considering a broad range of possible design features for such a program. Such features include those discussed or included in several articles,<sup>94 95 96</sup> rules<sup>97 98 99</sup> and programs.<sup>100 101</sup>

<sup>94</sup> McAllister, Lesley K., Third-Party Programs to Assess Regulatory Compliance, Presented at the Administrative Conference of the United States, October 22, 2012.

<sup>95</sup> Esther Dufflo, et al., Truth-Telling By Third-Party Auditors and the Response of Polluting Firms: Experimental Evidence From India, 128 Quarterly Journal of Economics 4 at 1499-1545 (2013).

<sup>96</sup> First Annual Oversight Report of the Decentralized Gateway Vehicle Inspection Program, Missouri Department of Natural Resources and the Missouri State Highway Patrol, 2008. <http://www.dnr.mo.gov/gatewayvip/docs/enforcementtrpt.pdf>.

<sup>97</sup> Renewable Fuel Standard program. <http://www.epa.gov/OTAQ/fuels/renewablefuels/>.

<sup>98</sup> Wood Heater Compliance Monitoring Program. <http://www.epa.gov/compliance/monitoring/programs/caa/woodheaters.html>.

<sup>99</sup> Mandatory Greenhouse Gas Emissions Reporting, California Environmental Protection Agency. <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>.

<sup>100</sup> Massachusetts Department of Environmental Protection, Third-Party Underground Storage Tank

We are considering the possibility of requiring sources to make design plans (including revisions) available online and easily accessible to the public as well as any impediment to doing so. We are also seeking input on what constitutes a reasonable time period for sources to make the design plans available online.

In addition to electronic storage of design plans, the EPA also plans to include electronic reporting in the forthcoming proposal that could amend subparts Cc and WWW of 40 CFR part 60 as a result of this review.

#### *E. Alternative Emission Threshold Determination Techniques*

The EPA is considering adjusting the emission threshold determinations that dictate when a GCCS must be installed, including variations in the modeling parameters as well as adding site-specific emission threshold determination. These alternatives may provide additional reporting and compliance flexibilities for owners and operators of affected landfills, including those that use new technologies to increase oxidation of emissions, employ BMPs to increase the effectiveness of GCCS, or increase organics diversion and source separation practices.

##### 1. Modeling Adjustments

An affected landfill currently has three different options (tiers) for estimating whether the landfill exceeds the NMOC emission threshold of 50 Mg per year. The simplest of these, the Tier 1 calculation method, uses default values for the potential methane generation capacity ( $L_0$ ) and methane generation rate ( $k$ ) to determine when the landfill exceeds the 50 Mg NMOC per year emission threshold. The default  $L_0$  is 170  $m^3$  per Mg of waste (equal to 5,458 cubic feet methane per ton of waste) and the  $k$  values are 0.05 per year for areas receiving 25 inches or more of rainfall per year and 0.02 per year for areas receiving less than 25 inches of rainfall. The Tier 1 default NMOC concentration is 4,000 parts per million by volume (ppmv) as hexane. If the Tier 1 calculated NMOC exceeds 50 Mg per year, the landfill must install controls or demonstrate, using more complex Tier 2 or 3 procedures, that NMOC emissions are less than 50 Mg per year.

A revised rule could allow for alternative Tier 1 default values and

modeling techniques based on the amount of organics in the waste. For example, the  $L_0$  is a function of the moisture content and organic content of the waste and  $L_0$  decreases as the amount of organic matter decreases. Recent studies have shown that average U.S. landfill  $L_0$  values have decreased 22 percent between 1990 and 2012 (from 102.6  $m^3$  per Mg of waste to 79.8  $m^3$  per Mg of waste) due to increased recovery of organic materials.<sup>102</sup> A revised rule could allow for landfill-specific  $L_0$  values to be calculated based on the amount of degradable organic carbon (DOC), similar to components of Equation HH-1 in the GHGRP for MSW landfills (40 CFR part 98, subpart HH).

Subpart HH of the GHGRP also provides separate  $k$ -values for different types of materials, which could be used as alternate Tier 1 default values in revised emission guidelines. Sewage sludge and food waste have the highest  $k$  values, followed by garden waste, diapers, paper, textiles and wood and straw.<sup>11</sup>

The IPCC model employs a modeling method to accommodate separate  $k$  and DOC modeling parameters as well as separate calculations for six different categories of organic wastes.<sup>103</sup>

If the EPA pursues incorporating alternative Tier 1 modeling values in any revised emission guidelines, the EPA would also need to allow for an alternative first-order decay model structure to compute a total methane generation rate for the landfill based on the sum of the methane generated from each separate waste stream. This alternative model may incorporate material-specific  $k$  and  $L_0$  values, instead of a single pair of  $k$  and  $L_0$  values applied to bulk MSW. The EPA requests input on whether the alternative modeling parameters and model structure in subpart HH of 40 CFR part 98, or other default parameters or modeling procedures would be appropriate to use for emission threshold determinations in revised emission guidelines.

The EPA also requests input on whether such an alternative modeling procedure would be limited to only those landfills that are employing organic diversion or source separation.

##### 2. Site-Specific Measurements

As indicated above, under the current emission guidelines, there are three different tiers available to an affected landfill to estimate whether the landfill exceeds the NMOC emission threshold of 50 Mg/yr. If an affected landfill fails a Tier 2 test (i.e., the calculated NMOC emissions are greater than 50 Mg/yr), then the landfill must conduct Tier 3 testing or install and operate an active GCCS.

The EPA received input recommending the addition of a new Tier 4 surface emission monitoring (SEM) demonstration to allow increased flexibility for landfills that exceed modeled NMOC emission rates if they can demonstrate that site-specific methane emissions are actually low. This SEM demonstration would be conducted using procedures similar to those currently in 40 CFR part 60, subpart WWW (see 40 CFR 60.755(d)). If the monitoring finds that methane emissions are below a level that the EPA adopts in the revised emission guidelines, then installation of a GCCS could be delayed.

As an example, the California Air Resources Board (ARB) adopted the Methane Emissions from MSW Landfills regulation in 2009.<sup>104</sup> Under this rule, if a landfill exceeds the waste-in-place and heat input thresholds, the landfill may conduct an SEM demonstration prior to being required to install a GCCS. If the measured surface methane emissions exceed 200 ppm, the landfill must install a GCCS. This SEM demonstration is similar to the Tier 4 option being considered by EPA.

The EPA is soliciting input about this new Tier 4 option or other ideas for more flexible emission threshold determination "Tiers" and what implementation procedures may be appropriate for each determination. As the EPA takes this new Tier 4 option under consideration, there are some implementation procedures that would need to be established. The EPA requests input on all aspects of implementing a new Tier 4 option, including the following specific items: (1) Which areas of the landfill would be subject to SEM requirements because these areas would no longer be limited to areas with GCCS installed; (2) what number of exceedances over a specified time period would require GCCS installation (40 CFR part 60, subpart WWW specifies a new well must be installed at three or more exceedances

Inspection Program. <http://www.mass.gov/eea/agencies/massdep/toxics/ust/third-party-ust-inspection-program.html>.

<sup>101</sup> Massachusetts Licensed Hazardous Waste Site Cleanup Professional Program, <http://www.mass.gov/eea/agencies/massdep/cleanup/licensed-site-professionals.html>.

<sup>102</sup> Stege, Alex. The Effects of Organic Waste Diversion on LFG Generation and Recovery from U.S. Landfills. SWANA's 37th Annual Landfill Gas Symposium. 2014.

<sup>103</sup> Intergovernmental Panel on Climate Change (IPCC), *IPCC Guidelines for National Greenhouse Gas Inventories*. Volume 5 (Waste), Chapter 3 (Solid Waste Disposal). 2006.

<sup>104</sup> California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, section 95463, Methane Emissions from Municipal Solid Waste Landfills.



in a quarter); (3) what frequency of SEM demonstration (e.g., quarterly monitoring for landfills accepting waste, annual monitoring for closed landfills) is appropriate; (4) what exceedance level is appropriate for determining if a GCCS must be installed (200 ppm or some other level); and (5) whether the Tier 4 option would apply to all landfills that could demonstrate surface emissions less than the determined exceedance level, regardless of how this

level was achieved; or, whether this option would be made available to only those landfills employing and maintaining oxidative cover practices, utilizing biofiltration cells, or implementing other established best practices or organics diversion programs as discussed later in this section.

#### F. Considerations for Implementation at Closed vs. Active Landfills

The landfills included as part of this review include landfills that have accepted waste since November 8, 1987, and that commenced construction, reconstruction or modification before July 17, 2014. Table 3 of this document summarizes the closure patterns of the approximately 1,800 landfills potentially affected by 40 CFR part 60, subparts Cc and WWW.<sup>105</sup>

TABLE 3—AGE DISTRIBUTION OF EXISTING LANDFILLS

| When did landfill stop accepting waste? | All landfills       |                                          | Landfills with design capacity of 2.5 million Mg or greater |                                          |
|-----------------------------------------|---------------------|------------------------------------------|-------------------------------------------------------------|------------------------------------------|
|                                         | Number of landfills | Cumulative waste-in-place (tons) in 2014 | Number of landfills                                         | Cumulative waste-in-place (tons) in 2014 |
| Before 1990 <sup>a</sup>                | 33                  | 84,300,000                               | 10                                                          | 63,200,000                               |
| Between 1990 and 1995                   | 335                 | 662,300,000                              | 62                                                          | 465,500,000                              |
| Between 1995 and 2000                   | 242                 | 583,300,000                              | 56                                                          | 429,500,000                              |
| Between 2000 and 2005                   | 97                  | 402,300,000                              | 29                                                          | 343,000,000                              |
| Between 2005 and 2010                   | 82                  | 310,900,000                              | 27                                                          | 250,500,000                              |
| Between 2010 and 2013                   | 77                  | 469,800,000                              | 31                                                          | 408,400,000                              |
| N/A. Active as of 2014 <sup>b</sup>     | 966                 | 6,695,300,000                            | 739                                                         | 6,493,000,000                            |
| Total                                   | 1,832               | 9,208,200,000                            | 954                                                         | 8,453,100,000                            |

<sup>a</sup> But accepted waste after November 8, 1987.

<sup>b</sup> Excludes model landfills that began operating in 2014 and are expected to be subject to the proposed subpart XXX NSPS for MSW Landfills.

The EPA recognizes that existing landfills represent a wide range of points in the life cycle of a typical landfill. Approximately 39 percent of the existing landfills (707/1,832) closed prior to 2005 and those landfills collectively account for approximately 19 percent of the total waste disposed through 2014. Because these wastes were disposed of between 10 and 25 years ago, the LFG emission rates from these older sites are decreasing and have a significantly smaller contribution to emissions from this source category.

Given the wide range of points within a lifecycle that are represented by potentially affected existing landfills, and recognizing that some of the affected sites have not disposed of waste in over 25 years, the EPA believes that the implementation of any adjustments to the current framework or incorporation of alternative control frameworks or monitoring requirements may affect active landfills differently than inactive landfills. Therefore, the EPA requests input on how adjusting the current framework, selecting an alternative framework or modifying the

monitoring requirements should be evaluated in terms of practicality, cost and emission reductions as these adjustments affect landfills of various ages and activity levels.

#### G. Implementation Issues

Since the landfills emission guidelines were promulgated in 1996, the EPA has become aware of a number of implementation issues for which landfill owners and operators, as well as regulators, need clarification. This section presents those issues and requests input on those clarifications and potential resolutions.

##### 1. LFG Treatment

In this document, the EPA is soliciting input on what constitutes sufficient LFG treatment. In the **Federal Register** document proposing a new subpart resulting from its review of the landfills NSPS (40 CFR part 60, subpart XXX), the EPA refined a numeric definition of LFG treatment and solicited input on a non-numeric definition that required compression, dewatering, and filtration of LFG, as

well as the creation of a site-specific monitoring plan. The EPA requests input on whether a non-numeric or numeric treatment requirement is appropriate for landfills subject to the emission guidelines. Further, the EPA requests input on whether previously proposed definitions of LFG treatment should be adopted or if other approaches to LFG treatment should be explored. We are also requesting input on expanding the use of treated LFG fuel for a stationary combustion device, as some people have previously interpreted this compliance option, but also include other uses such as the production of vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process.

##### 2. Closed Areas

To determine whether NMOC emissions from nonproductive areas of a landfill are less than 1 percent of the total landfill NMOC emissions (and hence controls are not required), the landfills regulations (40 CFR part 60, subparts Cc and WWW) rely on

<sup>105</sup> See Docketed Memorandum "Summary of Landfill Dataset Used in the Cost and Emission Reduction Analysis of Landfills Regulations. 2014."

modeled NMOC rates. To refine the measurements of these nonproductive areas, the EPA is requesting input on allowing landfill owners or operators to use either the measured or modeled flow of LFG to determine if an area is nonproductive. The EPA is also requesting input on what criteria and procedures would be considered acceptable for making these estimates. The provisions would apply to physically separated, closed areas of landfills.

### 3. Submitting Corrective Action Timeline Requests

If a landfill exceeds a wellhead operating parameter, the landfill owner or operator must initiate corrective action within 5 days and follow the timeline in 40 CFR part 60, subpart WWW for correcting the exceedance. During implementation of subpart WWW, the question has been raised whether a landfill needs agency approval of corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for installing a GCCS.

The EPA is seeking input on whether a specific schedule for submitting these requests for alternative corrective action timelines is appropriate because investigating and determining the appropriate corrective action, as well as the schedule for implementing the corrective action, will be site specific and depend on the reason for the exceedance. We also solicit input on whether any clarifications should be included in the revised emission guidelines to expedite the submission of any alternative time line requests (i.e., as soon as they know that they would not be able to correct the exceedance in 15 days or expand the system in 120 days) to avoid being in violation of the rule.

To address implementation concerns associated with the time allowed for corrective action, the EPA requests input on an approach that extends the requirement for notification from 15

days to as soon as practicable, but no later than 60 days. Many requests for an alternative compliance timeline express the need for additional time to make necessary repairs to a well that requires significant construction activities. Extending the time period to as soon as practicable but no later than 60 days may reduce the burden and ensure sufficient time for correction. If the EPA were to extend the time period, then the EPA also would consider removing the requirement to submit an alternative timeline for correcting the exceedance. Thus, by no later than day 60, the landfill would have to either have completed the adjustments and repairs necessary to correct the exceedance, or be prepared to have the system expansion completed by day 120. The EPA is also requesting input on whether 60 days is the appropriate amount of time that would allow owners or operators to make the necessary repairs.

### V. Statutory and Executive Order Reviews

Under Executive Order 12866, titled Regulatory Planning and Review (58 FR 51735, October 4, 1993), this is a "significant regulatory action" because the action raises novel legal or policy issues. Accordingly, the EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Order 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action. Because this action does not propose or impose any requirements, other statutory and Executive Order reviews that apply to rulemaking do not apply. Should the EPA subsequently determine to pursue a rulemaking, the EPA will address the statutes and Executive Orders as applicable to that rulemaking.

Nevertheless, the EPA welcomes input and/or information that would help the EPA to assess any of the following: The potential impact of a rule

on small entities pursuant to the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*); potential impacts on federal, state, or local governments pursuant to the Unfunded Mandates Reform Act ((UMRA) (2 U.S.C. 1531–1538); federalism implications pursuant to Executive Order 13132, titled Federalism (64 FR 43255, November 2, 1999); availability of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113; tribal implications pursuant to Executive Order 13175, titled Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 6, 2000); environmental health or safety effects on children pursuant to Executive Order 13045, titled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997); energy effects pursuant to Executive Order 13211, titled Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (66 FR 28355, May 22, 2001); paperwork burdens pursuant to the Paperwork Reduction Act (PRA) (44 U.S.C. § 3501); or human health or environmental effects on minority or low-income populations pursuant to Executive Order 12898, titled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994). The EPA will consider such comments during the development of any subsequent rulemaking.

### List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

Dated: June 30, 2014.

Gina McCarthy,  
Administrator.

[FR Doc. 2014–16404 Filed 7–16–14; 8:45 am]

BILLING CODE 6560–50–P

## **Attachment X**

**Waste Management, Comments** on Supplemental Proposal (**Oct. 26, 2015**),  
Doc. No. EPA-HQ-OAR-2003-0215-0198 (excerpts)



October 26, 2015

***Via Electronic Transmission: [www.regulations.gov](http://www.regulations.gov)***

Ms. Hillary Ward

***[ward.hillary@epa.gov](mailto:ward.hillary@epa.gov)***

Fuels & Incineration Group, Sector Policies and Programs Division

US Environmental Protection Agency

109 T.W. Alexander Drive (E143-05)

Research Triangle Park, NC 27711

**Re: Docket ID No. EPA-HQ-OAR-2003-0215**

**Docket ID No. EPA-HQ-OAR-2014-0451**

Dear Hillary,

Waste Management ("WM") is pleased to provide the following comments on the U.S. Environmental Protection Agency's ("EPA" or "Agency") Supplemental Proposal for the Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart XXX ("Supplemental NSPS") 80 Fed. Reg. 52162 (August 27, 2015) and the Proposed Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills ("Proposed EG"). 80 Fed. Reg. 52100 (August 27, 2015). WM is North America's leading provider of integrated waste management and environmental solutions. We operate 262 active, solid waste landfills, and at 134 of them, operate beneficial landfill-gas-to energy ("LFGTE") projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including about 700 of our own refuse collection trucks. The Proposed NSPS and EG rules will have a very significant impact on our landfill facilities and our renewable energy projects.

WM has been working cooperatively with the Agency for over a decade on revisions and clarifications to the existing NSPS standards set forth at 40 C.F.R. Part 60, Subpart WWW ("Subpart WWW") and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 40 C.F.R. Part 60, Subpart Cc ("Emission Guidelines" or "EG"). With its September 15, 2014 comments on the Proposed NSPS in Subpart XXX, 79 Fed. Reg. at 41796 (July 17, 2014) and the Advanced Notice of Proposed Rulemaking ("ANPRM") for the Emission Guidelines, 79 Fed. Reg. 41772 (July 17, 2014), WM incorporated by reference for inclusion into both dockets WM's comments prepared in response to EPA's proposed rulemaking actions in 2002 and 2006, and additional data submitted in response to various requests by EPA for information relevant to the Landfill NSPS standards.

Because the Agency's proposed Subpart XXX, its Supplemental NSPS and the Proposed EG in Subpart Cf are so closely interrelated, WM is incorporating by reference our September 15, 2014 comments on the proposed Subpart XXX and the ANPRM EG, at Docket Nos. EPA-HQ-OAR-2013-0215-0097, 0100 and EPA-HQ-OAR-2014-0451-0037, 0052. WM has again prepared combined comments on both rulemaking notices, in light of the substantial and apparent overlap among the two proposals and the previously proposed Subpart XXX. WM intends for this letter to be posted in each docket and requests that EPA respond comprehensively to each comment included herein.

Before discussing our views on particular aspects of the proposals, we want to commend you and the management of the Fuels and Incineration Group for the very open and collaborative process used to develop these proposals. You have been open, transparent and have encouraged broad stakeholder information and input, which we believe is reflected in the resulting proposals. WM and EPA have a shared interest in ensuring that the final rules for new, modified and existing landfills are reasonable, cost-effective, easy to implement by both the regulated community and state regulators, and reflect the lessons learned and the extensive reductions already realized by implementation of the current standards.

## **Regulated Pollutant -- Landfill Gas**

### **WM Supports EPA's Decision to Maintain Landfill Gas (LFG) as the Regulated Pollutant**

WM supports the Agency's continued focus on landfill gas as the regulated pollutant in the Proposed EG Rules (See 80 Fed. Reg. at 52105) and supports the same for the final NSPS. WM provided comments on the Proposed NSPS and ANPRM that outlined our reasoning. (See Docket # EPA-HQ-OAR-2014-0451-0037) First and foremost, the direct regulation of methane is unlikely to fundamentally change the structure of or benefits of the Landfill EG. Landfill gas is well understood to be composed of roughly 50% methane, 50% carbon dioxide and 1% NMOC. 79 Fed. Reg. at 41777. EPA's determination of the Best System of Emission Reduction ("BSER") is based on a well-designed and well-operated landfill gas collection system, and a control system for collected LFG that achieves 98% reduction of NMOC. 79 Fed. Reg. at 41803. This system of BSER is effective for all components of LFG, notwithstanding that EPA identified NMOC as surrogate for LFG in the initial Subpart WWW / EG rulemaking in 1996. See 79 Fed. Reg. at 48100. Therefore, adding methane as a pollutant under the Landfill NSPS/EG will not further reduce methane emissions, because they have already been addressed as a component of LFG, and are inseparable from the NMOCs in the LFG. There would be simply no environmental benefit to regulating methane directly. EPA has neither demonstrated nor suggested that there is a more effective way to address methane emissions than already established via the current regulation of landfill gas emissions as a whole. Further, WM does not believe that there is any more effective or feasible manner in which to reduce methane emissions from landfills than through a well-designed and well-operated landfill gas collection

We are concerned that few landfills will use Tier 4 if EPA finalizes the provision and fails to provide even a single corrective action opportunity. As currently proposed, if a landfill finds a single 500 ppm exceedance during a Tier 4 test, EPA is requiring development of a design plan and installation/operation of a GCCS. The Tier 4 test provides a useful tool to better characterize the actual emissions from a site. Use of Tier 4 should be encouraged rather than discouraged as it will enhance decision-making.

**The Recordkeeping Requirements in 60.39f(g) for Conducting Tier 4 Should Specify that all Readings Above 500 ppm be Recorded with Documentation of Corrective Action Mechanism Implemented and the Results of Re-monitoring**

The proposed recordkeeping requirement to maintain records for five years for *every methane concentration reading* is extremely burdensome. As noted above, thousands of data points are generated during a SEM event. To require landfill owner/operators to maintain records of every methane reading generated for a five-year period will quickly overwhelm our recordkeeping systems. Furthermore, the Agency has not demonstrated a need for or an intended use of this voluminous data.

**We Urge EPA to Delete the Wind Speed Criteria, and Maintain the 40 C.F.R. Part 60 Subpart WWW Surface Monitoring Provisions for the Performance of Tier 4**

It can be very difficult, and in some cases impossible, to implement SEM in areas where wind restrictions apply. We are very concerned that EPA's proposed wind speed criteria will make the Tier 4 alternative determination impossible to use. As WM noted in comments on the 2014 NSPS proposal and ANPRM, in California, almost 75% of the landfills conducting SEM were forced to request a permanent waiver from the State's allowable wind speed because it is an unworkable standard. A number of states and local solid waste authorities commented on use of a wind speed requirement to describe implementation difficulties in meeting the proposed five miles per hour average or 10 miles per hour instantaneous limit and warned against its adoption.<sup>11</sup>

EPA should not include similar language in promulgating the NSPS and EG rules. Landfill owner/operators will find it very difficult to assemble teams and schedule monitoring events if they must be canceled due to an arbitrary wind speed limit. Furthermore, in many areas of the country, the wind speeds frequently exceed the proposed average and instantaneous limits. In fact, California's allowable 5 mph average wind speed is not technically "windy"; according to the Beaufort wind scale, it is considered a light breeze. We thus ask EPA to retain the current approach for quarterly SEM, and allow Tier 4 monitoring during typical meteorological conditions. This regulatory language has worked well as a guide for conducting quarterly SEM, and is the appropriate guide for conducting Tier 4 SEM.

---

<sup>11</sup> See Docket ID Numbers EPA-HQ-OAR-2014-0451-0033, EPA-HQ-OAR-2014-0451-0149, EPA-HQ-OAR-2003-0215-0125

Additionally, the proposed rule requires that average wind speed be determined using an onsite anemometer with a continuous recorder for the entire duration of the monitoring event. This presents a number of potential implementation problems in the performance of Tier 4 monitoring. Wind speeds will naturally vary across the many acres encompassed by the landfill and so wind speed measurements at a weather station located at the site office, for example, may not be representative of wind speeds on the landfill hill. We are very concerned that maintaining the proposed wind speed criterion will make use of Tier 4 highly problematic if not impossible in many regions of the country.

#### **We do not Support a Methane Threshold Less than 500 ppmv for Tier 4**

The EPA requests comment on whether a level between 200 and 500 ppm is appropriate for the Tier 4 provisions, and whether setting the level below a specific point in this range poses fire or other safety concerns for operating a GCCS.

As EPA states in Docket ID Number EPA-HQ-OAR-2014-0451-0084, California ARB initially proposed a 200 ppm SEM threshold for both GCCS installation and for GCCS operation in its regulation. However, ARB finalized 500 ppm for GCCS operation because a lower threshold could cause an operator to overdraw the vacuum on the GCCS (to avoid a surface exceedance), which in turn could draw in too much oxygen and possibly cause fires. The EPA recognized these concerns with setting the threshold too low, which may in turn cause operators of voluntary GCCS to overdraw the vacuum on the GCCS, and therefore has proposed a level of 500 ppm considering both environmental protection and safety. It appears EPA has already sufficiently answered its own question as to the appropriate level for Tier 4 demonstration. We agree with EPA's analysis to retain the 500ppm limit, as proposed.

#### **SEM Intervals Should Not be Changed**

We also noted that in 60.34f, EPA proposes a broad "catch all" standard of "no more than 30-meter intervals." This could allow states to be more stringent than both the Emission Guidelines and the NSPS in its state plans. Such ambiguity and compliance uncertainty does not meet practical enforceability standards. It is unclear what the increased cost would be for such a broad standard that could literally range from a zero to 30 meter interval. These costs are not factored into the regulatory impact analysis relied on in this rulemaking, although EPA did estimate costs for reduced monitoring intervals as part of its enhanced monitoring alternative. Accordingly, EPA should maintain its current approach to SEM under Subpart WWW, which provides that SEM must be conducted "at 30-meter intervals (or a site-specific established spacing)" 40 C.F.R. §60.755(c)(1).

Finally, EPA has requested comments on whether landfill owners or operators should provide notification to regulators prior to conducting the quarterly Tier 4 SEM. This notification affords regulators the opportunity to observe the testing and provides greater transparency and trust. As such, this is a reasonable requirement and is acceptable to the landfill industry.

We also recommend that the rules require the landfill owner or operator submit an alternative timeline request for agency approval as soon as practicable where system expansion or alternative remedy for corrective action will require more than 120 days to complete, consistent with the 1998 preamble and rule provisions. EPA should also clarify that significant construction activities such as re-drilling a well or repairing/replacing buried collector piping are considered system expansion.

## Electronic Reporting

### EPA Must Clarify Electronic Reporting Requirements

WM continues to believe that electronic reporting requirements beyond combustion device stack test reports would be overly burdensome and inappropriate for the landfill category as we discussed in our previous comments and incorporate herein (Docket ID Numbers EPA-HQ-OAR-2014-0451-0037, EPA-HQ-OAR-2003-0215-0100).

Although the proposed rule language appears to only require stack test reporting to the ERT (see 60.38f(j)), the preamble contains conflicting information. EPA states in the preamble that the agency *“is proposing electronic reporting of required performance test reports, NMOC emission rate reports, and annual reports.”* See 80 Fed. Reg. at 52111. Later on in the preamble, EPA states it is proposing that *“owners or operators of MSW landfills submit electronic copies of required performance test and performance evaluation reports by direct computer-to-computer electronic transfer using the EPA-provided software”*. See 80 Fed. Reg. at 52127.

We are confused by what EPA means by “performance evaluation reports”. We are also confused as to which reports EPA proposes to require the MSW landfill owner/operator to submit electronically. We do not support electronic submittal of compliance reports or other reports or records beyond combustion stack test reports. EPA must clarify in both the final rules and preamble that only required performance test reports are to be electronically submitted, where test methods are supported by the Electronic Reporting Tool (ERT).

## Wet Landfills

### Shorter Lag Times for Wet Landfills Are Not Warranted or Justified

WM is concerned that EPA is continuing to target “wet” landfills for additional requirements under the proposed NSPS/EG. In its comments on the ANPRM, WM explained why EPA should not reduce the initial lag times for landfills located in wet climates, landfills that recirculate



leachate, or landfills that add other liquids to accelerate waste decomposition. Specifically, WM highlighted ambiguity in the definition of wet landfills, the oversimplification that results from definitions that rely primarily on measured precipitation and leachate levels, and the potential overlap in requirements between the Landfill NSPS/EG and the Subpart AAAA NESHAP. (See Docket # EPA-HQ-OAR-2014-0451-0037) We continue to have concerns regarding all of these issues, in addition to a number of new issues raised in the proposed EG.

**EPA's Own Analysis of the 2.5/34 Proposal Indicates that the Additional Emission Reductions Achieved by Requiring Shorter Lag Times are Minimal**

In the preamble of proposed Subpart Cf, EPA describes its analysis of potential emission reductions at "wet" landfills. Under EPA's analysis, 377 of the 651 landfills estimated to be required to install GCCS by 2025 would be "wet," a term they do not define. EPA states *"reductions from these 377 wet landfills constitute approximately 50% of the incremental reductions achieved by proposed option 2.5/34. Nearly all of these incremental reductions are coming from the 343 landfills that are located in areas receiving 40 inches of precipitation or more. Based on this analysis, the NMOC threshold of 34 Mg/yr in this proposal achieves significant reduction in emissions from wet landfills."* (80 Fed.Reg. at 51237)

EPA then analyzed the magnitude of the additional reductions that might result from shorter lag times. Specifically, EPA stated "an additional approximately 220 Mg/yr of reductions in NMOC emission and 35,200 Mg/yr of reductions in methane could be achieved from these 377 wet landfills in 2025." (80 Fed.Reg. at 52138)

We have reached several conclusions based on our review of EPA's analysis. First, we note that the level of incremental emission reductions achieved under an emission threshold of 2.5/34, without imposing any additional requirements on wet landfills, is less than 5% of the base case NMOC and CH<sub>4</sub> emission reductions, that is compared to the current rule (at 2.5/50). This is a modest reduction in emissions, given the significant reduction of the emissions threshold. As described in our comments on the proposed 2.5/34 emission threshold, the incremental cost per ton of emissions reduced associated with the 2.5/34 proposal cost is over three times higher than as the cost per ton of emissions reduced under the current rule.

WM has also evaluated the magnitude of the incremental emission reductions resulting from the basic 2.5/34 approach as compared to additional reductions resulting from imposing the shorter lag time requirement for wet landfills. Specifically, we compared the level of NMOC and CH<sub>4</sub> emission reductions under shorter lag times to total incremental reductions (e.g., the 2.5/34 scenario) resulting from the 377 "wet" landfills.<sup>21</sup> The result of requiring shorter lag times would be a 16% increase in incremental reductions.

---

<sup>21</sup> To perform this comparison, we assumed that 50% of the incremental emission reductions associated with going from 2.5/50 to 2.5/34 would be generated by "wet" landfills. See 80 Fed.Reg.at 52137).

The additional emission reductions resulting from shorter lag times should be put in context, however, because the reductions achieved by the core 2.5/34 scenario are only 5 percent of the base case reductions. Thus, we have compared the emission reductions associated with requiring shorter lag times at wet landfills already complying with the 2.5/34 scenario to the total reductions delivered by the rule (e.g., the base case + the 2.5/34 increment + the shorter lag times). **This analysis confirms that the additional emission reductions associated with requiring shorter lag times for “wet” landfills are vanishingly small – only 0.4% - of the total annual emission reductions expected under the current proposal.**

**EPA has Failed to Provide Cost or Cost-Effectiveness Information for the Proposed Shorter Lag Times Requirement**

WM is concerned that EPA has failed to provide any discussion of the cost and cost effectiveness of shorter lag time requirements. From our review of other proposed changes to the NSPS and EG, we have concluded that the more stringent requirements come with significantly higher costs. EPA should not finalize shorter lag times at wet landfills without providing additional information to the regulated community and other stakeholders.

**We are Concerned that EPA’s Apparent Approach Under the NSPS/EG will be Difficult to Coordinate with the Subpart AAAA NESHAP, which Could Create Significant Problems for Regulated Entities in the Future**

As EPA notes, landfills defined as bioreactors under 40 CFR Part 63, subpart AAAA, “*are required to install and operate a GCCS on an accelerated schedule compared to non-bioreactor landfills. Once a landfill is required to install and operate a GCCS under either [Subpart AAAA] or [the current NSPS/EG rules], the GCCS requirements remain the same.*” (80 Fed.Reg. 52137) WM is concerned that the coordinated approach, which has worked effectively for many years, could be undermined if EPA proceeds to finalize new NSPS/EG requirements for shorter lag times.

A key concern is that the current NESHAP would continue to apply the 2.5/50 emission threshold in the NESHAP, while the updated NSPS/EG would apply to the lower 2.5/34 threshold. This failure to coordinate the timing of the rules would thus result in different levels of stringency and inconsistent coverage of sites. Further, EPA’s proposal, while acknowledging the relationship between the two rules, does not clearly confirm that a final NSPS/EG with shorter lag times would maintain the current coverage arrangement between the NESHAP and the NSPS/EG.

WM supports maintaining the current system for managing “wet” landfills, wherein Subpart AAAA regulates some landfills and the NSPS/EG regulates others. We strongly encourage EPA to delay implementing the current proposal on wet landfills. Given the connections between the NESHAP Subpart AAAA and this proposed rule, we urge EPA to address these issues in a coordinated rule-making that ensures a consistent approach and clear delineation of authority between the NSPS/EG and the NESHAP.

## Attachment Y

**Waste Management, Comments** on Advanced Notice of Proposed Rulemaking (Sept. 15, 2014), Doc. No. EPA-HQ-OAR-2014-0451-0037 (excerpts)



September 15, 2014

***Via Electronic Transmission: A-and-R-docket@epa.gov***

Ms. Hillary Ward

***ward.hillary@epa.gov***

Fuels & Incineration Group, Sector Policies and Programs Division

US Environmental Protection Agency

109 T.W. Alexander Drive (E143-05)

Research Triangle Park, NC 27711

**Re: Docket ID No. EPA-HQ-OAR-2003-0215**

**Docket ID No. EPA-HQ-OAR-2014-0451**

Dear Hillary,

Waste Management ("WM") is pleased to provide the following comments on the U.S. Environmental Protection Agency's ("EPA" or "Agency") Proposed Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart XXX ("Subpart XXX" or "Proposed NSPS") 79 Fed. Reg. 41796 (July 17, 2014) and the Advanced Notice of Proposed Rulemaking: Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills ("ANPRM"). 79 Fed. Reg. 41772 (July 17, 2014). WM is North America's leading provider of integrated waste management and environmental solutions. We operate 262 active, solid waste landfills, and at 137 of them, operate beneficial landfill-gas-to energy (LFGTE) projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including 300 of our own refuse collection trucks. The Proposed NSPS will have a very significant impact on our landfill facilities and our renewable energy projects.

WM has been working cooperatively with the Agency for over a decade on revisions and clarifications to the existing NSPS standards set forth at 40 C.F.R. Part 60, Subpart WWW (Subpart WWW) and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 40 C.F.R. Part 60, Subpart Cc (Emission Guidelines or EG) . WM incorporates by reference into these comments for inclusion into both the Subpart XXX and ANPRM dockets, the substantial body of work that it has prepared in response to EPA's proposed rulemaking actions in 2002 and 2006, and in response to various requests by EPA for WM to submit additional data and information relevant to the Landfill NSPS standards. Many of these submittals are included in the docket for the proposed rulemaking and some are referenced

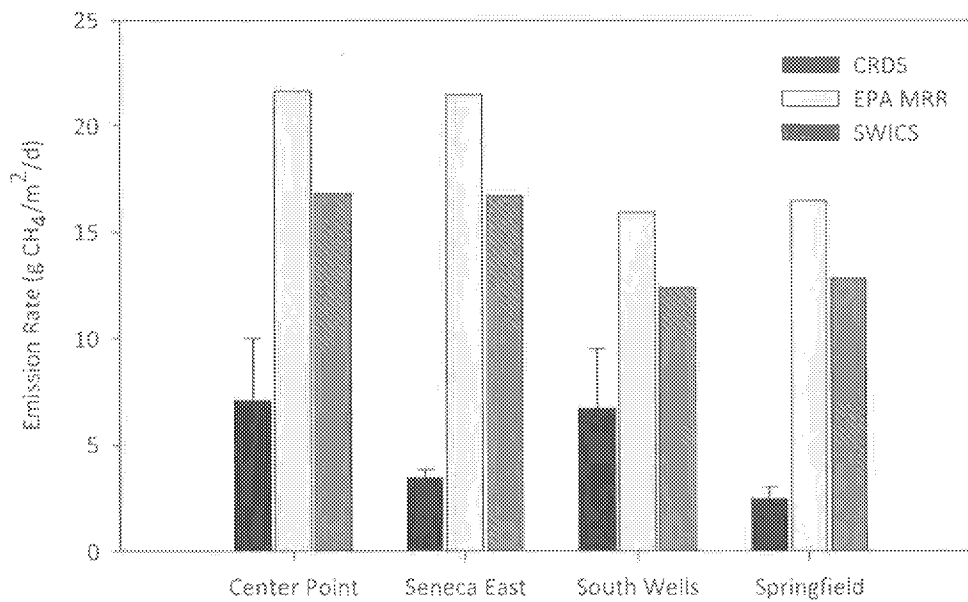


Figure 1. Comparison of Methane Emission Results from CRDS Measurements and Models (error bars represent 1sd)

#### **D. Different Standards for Wet Landfills are Not Warranted or Justified**

EPA is taking comment in both the preamble to proposed Subpart XXX and the ANPRM with respect to whether it should consider reducing the design capacity threshold or initial lag times for landfills that are located in a wet climate or that recirculate leachate or add other liquids to the landfills to accelerate waste decomposition. 79 Fed. Reg. at 41808; 79 Fed. Reg. at 41784. WM disagrees that these so-called “wet landfills” should be subject to a more stringent set of requirements. First and foremost, EPA’s mere solicitation of comment in the preamble to Subpart XXX and in the ANPRM fails to provide any clear notice of what EPA may be considering. In fact, EPA requests comment on the fundamental question of how a wet landfill might be defined, noting for example that a wet landfill could be defined as a landfill that has precipitation of greater than 25 inches per year and/or recirculates leachate (or other liquids) See 79 Fed. Reg. 41808; 79 Fed. Reg. at 41784. EPA offers no reasoned basis for either this example definition or its assumption that wet landfills may warrant separate treatment under Subpart XXX.

EPA should not attempt to define or apply different standards to “wet” landfills. There is no scientific data to support that a wet landfill would be defined as a landfill that has greater than 25 inches of precipitation per year and/or recirculates leachate (or other liquids), nor has EPA prepared a sufficient analysis of the additional costs that would impose an unnecessary burden on hundreds of landfills that recirculate leachate. Moisture content can vary considerably from cell to cell in a landfill, creating pockets of saturated and dry layers. In addition, several variables play a role in determining how the leachate and liquids will interact with the waste

mass, including the type of waste accepted, daily cover types, climate, age of the waste, etc. These variables add complexity to how the leachate and liquids will interact with the waste mass. Therefore EPA should not assume that any given amount of precipitation or leachate recirculation should be the sole basis for causing enhanced gas generation.

The National Emission Standard for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR Part 63 Subpart AAAA (the "Landfill NESHAP") already addresses landfills that have 40% or more moisture content due to the addition of liquids. The NESHAP requires installation of GCCS prior to initiating liquids addition, regardless of whether the landfill emissions rate equals or exceeds the NMOC threshold prescribed in the NSPS (currently 50 Mg/yr). Startup of the GCCS is required within 180 days after initiating liquid addition or within 180 days after reaching 40% moisture content within the landfill, whichever is later.

EPA evaluated recirculating leachate as a part of the Landfill NESHAP rulemaking and determined that leachate recirculation should not trigger additional requirements. *See, e.g.,* Municipal Solid Waste Landfills: Background Information Document for National Emission Standards for Hazardous Air Pollutants – Public Comments and Responses, EPA 453/R-02-014 November 2002 at p. 47). As part of the GHGRP, EPA requires MSW Landfills to disclose whether they practice leachate recirculation. Further, if sites do recirculate leachate, then the site must account for the leachate recirculation along with precipitation to determine which k value to use to estimate emissions (See Table HH-1 of Subpart HH of Part 98). Large quantities (i.e., several million gallons) of leachate recirculation have negligible impact on the total precipitation value that ultimately dictates which k value to use. WM provided comments to EPA discussing the effect of water with respect to the development of an appropriate k value in AP-42. (See Attachment 4.)

Given the lack of specific information related to how this "option" might be implemented, the absence of any analysis, the apparent redundancy with NESHAP Subpart AAAA, and the absence of a scientifically reliable means of determining a threshold specification for wet landfills, we urge EPA to retain the current approach in Subpart WWW and the EG. EPA should continue to rely on the existing Landfill NESHAP requirements to address early collection for sites that have 40% moisture content due to liquids addition. The same basic design capacity and emission-based triggers for installing a GCCS will appropriately ensure timely installation of emissions controls at all landfills.

#### **E. EPA Has Not Justified a Reduction in the NMOC Emissions Threshold for GCCS Installation**

EPA has proposed in Subpart XXX to reduce the NMOC threshold from the "baseline" (Subpart WWW) level of 50 Mg/yr to 40 Mg/yr. 79 Fed. Reg. at 41811. EPA also requests comment on reducing the NMOC threshold in the ANPRM, although in that context has not proposed a specific threshold. 79 Fed. Reg. at 41782. **WM has carefully reviewed EPA's rationale for**

## **Attachment Z**

**Republic Services, Comments** on Proposed Rulemaking (**Oct. 26, 2015**),  
Doc. No. EPA-HQ-OAR-2014-0451-0176 (excerpts)



October 26, 2015

***Sent Via Electronic Transmission: A-and-R-Docket@epa.gov***

Environmental Protection Agency  
EPA Docket Center (EPA/DC)  
Mail code 28221T  
Attention Docket ID No. EPA-HQ-OAR-2014-0451  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

**Subject:** Docket ID No. EPA-HQ-OAR-2014-0451  
Comments on Proposed Rules; Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills

Dear Ms. Ward:

Republic Services (Republic) appreciates the opportunity to provide comments on the “Proposed Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills” published in the Federal Register on August 27, 2015 (80 Fed. Reg. 52100), for which comments are due October 26, 2015.

As the second largest owner/operator of municipal solid waste (MSW) landfills in the United States, Republic has significant experience operating landfill gas collection and control systems (GCCS) that have been subject to the current new source performance standards (NSPS) and Emission Guidelines since the initial promulgation of those standards. We own and/or operate nonhazardous landfills consisting of over 190 active and 130 closed landfills, over 200 of which have a GCCS.

Republic views management of landfill gas as much more than a compliance obligation—we view proper landfill gas management as a fundamental requirement of providing competent and reliable environmental services. Republic’s commitment to environmental stewardship is further illustrated by our efforts to identify and implement economically viable and long-term beneficial reuses for landfill gas to displace both natural gas and electricity generated by other sources. Currently, Republic uses the landfill gas from 70 landfills to generate electricity, and we are continuously seeking additional landfill gas to energy opportunities. Our effort to combust or use methane as an energy resource has also resulted in the ancillary benefit of significantly reducing greenhouse gas emissions.

With this culture of environmental stewardship and our extensive experience in landfill management, Republic submits the following comments on EPA’s proposed revisions to the landfill NSPS.

---

18500 North Allied Way  
Phoenix, AZ 85054  
(480) 627-3100  
Nwuestenberg@republicservices.com

Attachments 169



Docket ID No. EPA-HQ-OAR-2014-0451

October 26, 2015

Page 11

those applications remain pending, to ensure administrative delays by states or EPA do not result in unintended consequences on the regulated community. *See, e.g.*, 40 C.F.R. § 70.7(b) (“[I]f a part 70 source submits a timely and complete application for permit issuance (including for renewal), the source's failure to have a part 70 permit is not a violation of this part until the permitting authority takes final action on the permit application ...”); 40 C.F.R. § 70.5(a)(2) (“The source's ability to operate without a permit, as set forth in § 70.7(b) of this part, shall be in effect from the date the application is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the permitting authority.”). So too should landfills receive the benefit of the doubt in the event of regulatory delays, particularly given that landfill GCCS plans would already have been certified by a professional engineer with his or her professional credibility at stake.

In short, Republic supports a GCCS update and approval process that allows the plan to be kept on-site with the ability for an Agency to view the plan on-site or request a copy. EPA should abandon its proposal to impose new approval requirements that would only add administrative burden without providing any meaningful environmental benefits. The proposed changes to the approval requirements could actually increase emissions due to increasing the delays in the approvals needed to install new equipment to collect and control landfill gas. Therefore, Republic recommends that EPA consider adopting a procedure similar to that recently adopted for Subpart Ja for landfill GCCS plans. A self-implementing approach like the one described above would help resolve Republic's past requests for EPA to address the significant backlog of GCCS design submittals, with the added benefit of reducing both landfill gas emissions and administrative burden.

#### **D. CORRECTIVE ACTION TIMELINE REQUEST**

EPA's proposal requests comments on the submittal of corrective action timelines. EPA is also “clarifying that ‘expansion’ of the GCCS means a *permanent* change that increases the capacity of the GCCS, such as increasing the size of the header pipes, increasing the blower sizes and capacity, and increasing the number of wells.” 80 Fed. Reg. at 52126 (emphasis added). Although overall these changes are generally acceptable, Republic is concerned that the term “permanent” could be viewed as ambiguous in the context of any components of a GCCS that must be replaced at some point during the life of the system. To avoid confusion, we request EPA remove the term “permanent” from the clarification regarding the meaning of a landfill “expansion.”

EPA specifically states in the preamble that they have not proposed a specific schedule in the rule language for submitting alternative timeline requests because investigating and determining the appropriate corrective action, as well as the schedule for implementing that corrective action, should be site specific and depend on the reason for exceedance. *See* 80 Fed. Reg. at 52126. We agree with EPA that corrective action schedules should be site specific.

However, in that same section of the preamble to its proposal, EPA requests comment on the alternative of extending the requirement for notification from “15 days” to “as soon as practicable, but no later than 60 days from when an exceedance is identified.” 80 Fed. Reg. at 52126. EPA provides various other scenarios for timelines as well. Republic appreciates EPA's attempt to clarify the required

Docket ID No. EPA-HQ-OAR-2014-0451

October 26, 2015

Page 12

correction action timing requirements, given the inconsistency in interpretation of those requirements by different regulatory authorities. But EPA's discussion of this alternative appears to inappropriately assume that all exceedances must be addressed via an expansion of the GCCS and require a 15-day notification. EPA's discussion appears to ignore the alternative expressly addressed in the 1998 NSPS Subpart WWW amendments, which provides the following guidance on alternative timelines:

Section 60.755(a)(3) is being revised to allow an alternative timeline to be proposed for correcting an exceedance in collection header pressure at each well. Consistent with 60.755(c)(4)(v), a sentence is being added to 60.755(a)(3) and 60.755(a)(5) to allow an alternative timeline to be proposed to the Administrator for correcting an exceedance. This revision makes the sections consistent. Depending on the remedy selected to correct the problem, a different timeline may be needed, but any timeline extending more than 120 days must be approved by the regulatory agency. 63 Fed. Reg. 32,748 (June 16, 1998)

By ignoring the possible alternative timelines made available to landfills, EPA's request for comment disregards efforts by operators to systematically diagnose the cause and determine possible solutions for correcting the exceedance. Many remedial actions, including pumping of wells, jet cleaning of force mains, blower repair, header/lateral pipe re-grading, and others can take more than 60 days but less than 120 days to complete, and may be more appropriate than expanding the GCCS, depending on the cause of the exceedance. But under the alternative described in EPA's proposal, those corrective actions requiring between 60 and 120 days would not suffice; a GCCS would be required, even if the emissions exceedances could be address before the end of 120 days, because EPA's proposal would not allow for an alternative timeline.

Republic fails to see the benefit of requiring special approval for a repair that eliminates the exceedance in 60 days, much less the draconian result of requiring an expansion of the system if the request is late or denied, when in prior rulemaking actions EPA recognized that correcting an exceedance within 120 days should be sufficient with proper approval. Since, as noted above, GCCS expansions may not only be the incorrect response but potentially counterproductive, EPA should allow landfills and state regulators the time and flexibility to determine the appropriate response without unnecessary procedural burdens or prescriptive remedies.

A good example of the potential pitfalls associated with requiring notification of alternative timeline request arises in the context of asbestos. The Asbestos NESHAP (40 CFR 61 Subpart M) requires a 45-day notification to the regulatory authority prior to initiating any excavation activity at a landfill, such as well or piping repair, replacement, or installation, that has potential to disturb regulated asbestos containing material (RACM). RACM disposal locations are documented upon disposal as required; however, over time, due to routine waste settlement, RACM may shift from initial documented location. Potential exists for possible disturbance of RACM during excavation such as well drilling and collection system repair. Therefore, sites may not be able to determine within 60 days whether an alternative timeline request will be necessary to ensure sufficient time remains to provide the notification required by the Asbestos NESHAP. State final landfill cover disturbance requirements can further delay identification of circumstances warranting an alternative corrective action timeline.

Docket ID No. EPA-HQ-OAR-2014-0451

October 26, 2015

Page 13

Many regulatory authorities currently follow the 1998 rule changes and do not require landfill owners or operators to submit alternative timeline requests if the corrective action or remedy other than expansion can be completed within 120 days. This approach minimizes paperwork and the burden on state agencies while recognizing that the schedule for implementing the corrective action will be site-specific and depend of the nature of the exceedance. Requiring state and local authorities to change their procedures will result in increased paperwork burden and will increase the need for additional resources to complete the additional reviews and approvals, especially if requests must be submitted within 15 days and subsequently approved. In our experience, many requests are never approved, and the proposed change would only exacerbate that concern.

In light of the concerns identified above, Republic recommends that EPA only require landfill owners or operators to submit an alternative timeline request for approval as soon as practicable and only in circumstances in which a system expansion or alternative corrective action will require more than 120 days to complete, consistent with the 1998 preamble and rule provisions. This alternative approach would address all the issues simultaneously by providing landfills sufficient time to complete a root cause analysis to determine the cause of any exceedances and identify appropriate case-specific corrective actions in a way that minimizes the need for state or EPA approval and the inevitable delays associated with that process. This approach will provide sufficient compliance assurance to the agency and an incentive for landfills to complete corrective actions (other than expansion) within 120 days.

A good example of this type of policy can be found in the refinery NSPS that EPA adopted in 2008 and amended in 2012. See 40 C.F.R. Part 60, Subpart Ja. Whereas the current landfill NSPS requires special approval for a landfill to avoid a default corrective action (GCCS expansion), the refinery NSPS adopts a common sense approach that requires a root cause analysis to identify the appropriate corrective action, without identifying a default approach. See 40 C.F.R. § 60.103a(c)-(e). Because no special approval is needed for the corrective action identified by the refinery as appropriate; the refinery must simply develop an implementation schedule to complete, as soon as practicable, any corrective actions that cannot be fully implemented within 45 days. Refineries must then include that schedule in the facility's annual report. See 40 C.F.R. § 60.103a(e). Without the threat of a default corrective action, refineries are free to properly assess the most effective (and cost-effective) means of ensuring good air pollution control is maintained.

This approach to exceedances is particularly appropriate for landfills. Unlike refineries, which are subject to specific emission limits, the exceedance of which suggests the possibility of an immediate impact to the environment, landfills are only subject to operating requirements that do not necessarily involve increased emissions when exceeded. For example, a monitoring event that indicates that a landfill gas collection well has lost negative pressure does not provide any actual information regarding the amount landfill gas emitted to the atmosphere. In fact, there are many possible explanations for an exceedance of the negative pressure parameter, and many of those explanations would suggest that EPA's default corrective action, GCCS expansion, would be inappropriate, and perhaps even counterproductive. Thus, given the likely absence of any immediate risk of environmental harm, and the many possible explanations for an exceedance of monitored parameters in a GCCS, a root cause analysis and corrective action procedure—without a default corrective action—appears particularly well-suited to landfills. Republic recommends that EPA consider this approach in lieu of the

Docket ID No. EPA-HQ-OAR-2014-0451

October 26, 2015

Page 14

unnecessarily prescriptive rules that impose deadlines and the default corrective action that are found in the Subpart Cf proposal.

**E. ELECTRONIC REPORTING**

EPA's effort to implement e-reporting is commendable, but warrants further evaluation to ensure any implementation difficulties, unnecessary burdens, and cost impacts are identified and resolved before EPA mandates the use of electronic reporting. EPA should clarify exactly which reports must be submitted electronically, given that the preamble language identifies different reports than the proposed regulatory language. EPA should also recognize that any requirement to electronically submit older reports that are not already maintained in electronic form could be particularly burdensome, and likely impossible for older reports that landfills are no longer required to maintain and that may have been discarded (e.g., site closure reports for landfills that no longer accept waste).

More generally, Republic is concerned that EPA e-reporting systems have often failed to function properly, for a variety of reasons. Accordingly, Republic asks EPA to address the following concerns before requiring landfills to begin reporting through an electronic system:

- Evaluate system user website availability (smaller landfills in remote areas may not have broadband internet access)
- Ensure system can manage the total number of users without crashing (especially as deadline approaches)
- Validate system reliability for uploading reports to avoid software errors
- Design system to be consistent with the landfill regulatory reporting requirements
- Finalize reporting system software forms, instructions, and user interface at least three months prior to compliance deadline

EPA should also be careful not to oversimplify the requirements of the landfill regulations in designing its e-reporting system for landfills. EPA's emission guidelines for landfills are complicated regulations, and could be even more complicated in some ways following EPA's proposed revisions. EPA must reflect that complexity in any reporting system, particularly if that system will be the only available means of reporting compliance to EPA. EPA should also avoid any attempt to apply the electronic reporting systems for other industries to landfills because, unlike other industries, landfill emissions are unique in that they are not directly proportional to an activity rate. While some are relatively straight forward and could be added to the Electronic Reporting Tool (ERT), annual reporting for landfills is quite distinct from that required of other industries. Current annual and semi-annual landfill NSPS reports contain narratives, background, and a rationale for landfill operations and conditions that likely will not fit well within the electronic reporting systems developed for other industries. Republic asks EPA to ensure that the electronic reporting systems continue to allow for entry of these discussions – the benefit they provide should outweigh any additional programming challenges.

Republic is also concerned that states will not adopt EPA's electronic reporting system, particularly in jurisdictions that have adopted regulations that are more stringent than the proposed NSPS. As a result, EPA's electronic reporting requirement could result in redundant reporting requirements, as landfills

Docket ID No. EPA-HQ-OAR-2014-0451

October 26, 2015

Page 31

**C. WET LANDFILLS**

In Republic's experience, landfills located in wet climates do not warrant any different requirements than other landfills. As an initial matter, the landfill National Emission Standard for Hazardous Air Pollutants already provides a backstop with the MACT standard that requires bioreactor landfills to install a gas collection and control system in the bioreactor prior to initiating liquids addition, regardless of whether the landfill emissions rate equals or exceeds the estimated uncontrolled emission rate of 50 Mg/yr specified in the NSPS. Startup of the collection and control system is required within 180 days after initiating liquid addition or within 180 days after reaching 40% moisture content within the bioreactor, whichever is later.

However, inherent in that policy is the understanding that precipitation and leachate recirculation alone should not trigger additional requirements. Imposing new mandatory requirements for such landfills would result in a large and unnecessary burden that would require additional cost even though EPA has not provided discussion of the cost and cost effectiveness based on a one year early installation date. Additionally, there is no scientific data to support the determination that a wet landfill should be defined as a landfill with a prescribed precipitation per year and/or recirculates leachate (or other liquids).

Each landfill is somewhat unique in that the solid waste mass creates various and complex pathways for water movement, and moisture content can vary considerably even within a landfill, creating pockets of saturated and dry layers. In addition, several variables play a complex role in determining how the leachate and liquids will interact with the waste mass, including the type of waste accepted, daily cover types, climate, age of the waste, etc. For this and other reasons, EPA should not assume that greater amounts of precipitation or leachate recirculation will result in greater gas generation.

Without further scientific data to support early gas collection at these types of facilities, EPA should rely on the existing MACT rule which addresses waste decomposition in wet environments more quickly. We recommend EPA to address any proposed changes to "wet" landfills in a coordinated rule with the NESHAP Subpart AAAA and NSPS/emission guidelines to ensure a consistent approach. The same basic design capacity and emission-based triggers for installing a GCCS will appropriately ensure timely installation of emissions controls at all landfills.

**D. MONITORING WELLHEAD FLOWRATE**

In addition to EPA's request for comment on a requirement to monitor wellhead flowrate, discussed above, EPA has also requested comment on any other wellhead monitoring parameters that may help to ensure GCCS are well-operated. Republic has not identified any additional measurement or monitoring parameters that would improve GCCS performance. On the contrary, Republic believes that additional requirements are not necessary and would not result in any meaningful improvement in emissions control performance. The requirement to monitor and maintain records of oxygen/nitrogen and temperature will serve as useful guidance for landfill operators and beneficial use projects to assess the performance of the GCCS and enhance operation conditions on a site specific level that will promote greater emission reductions in a safe manner without imposing additional burdens. In addition, the

Message

**From:** McGartland, Al [McGartland.Al@epa.gov]  
**Sent:** 8/4/2017 2:08:08 PM  
**To:** Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Rees, Sarah [rees.sarah@epa.gov]  
**Subject:** FW: Updated Landfills EG Proposal and Cost Memo  
**Attachments:** EG\_cost\_memo\_080317.docx; EO12866\_Landfills EG State Plan Extension 2060-AT64 Proposal\_20170803.docx

For your situational awareness --

**Deliberative Process / Ex. 5**

## Deliberative Process / Ex. 5

**From:** Dunkins, Robin  
**Sent:** Thursday, August 03, 2017 4:06 PM  
**To:** Szabo, Aaron L. EOP/OMB <Aaron\_L\_Szabo@omb.eop.gov>; Culligan, Kevin <Culligan.Kevin@epa.gov>  
**Cc:** Weatherhead, Darryl <Weatherhead.Darryl@epa.gov>; McGartland, Al <McGartland.Al@epa.gov>; Marten, Alex <Marten.Alex@epa.gov>; Kopits, Elizabeth <Kopits.Elizabeth@epa.gov>; Sheppard, Andrew <sheppard.andrew@epa.gov>; Vetter, Rick <Vetter.Rick@epa.gov>; Zenick, Elliott <Zenick.Elliott@epa.gov>; Macpherson, Alex <Macpherson.Alex@epa.gov>  
**Subject:** RE: Updated Landfills EG Proposal and Cost Memo

Aaron,

Please see the attached files which includes the updated FRN notice proposing

**Deliberative Process / Ex. 5**

## Deliberative Process / Ex. 5

Thanks,  
Robin

Robin Dunkins, Group Leader  
Natural Resources Group  
OAR/OAQPS/SPPD Mail Code: E143-03  
U.S. Environmental Protection Agency  
Research Triangle Park, NC 27711  
919-541-5335  
[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

**From:** Dunkins, Robin  
**Sent:** Thursday, July 27, 2017 5:09 PM  
**To:** 'Szabo, Aaron L. EOP/OMB' <[Aaron\\_L\\_Szabo@omb.eop.gov](mailto:Aaron_L_Szabo@omb.eop.gov)>; Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>  
**Cc:** Weatherhead, Darryl <[Weatherhead.Darryl@epa.gov](mailto:Weatherhead.Darryl@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Marten, Alex <[Marten.Alex@epa.gov](mailto:Marten.Alex@epa.gov)>; Kopits, Elizabeth <[Kopits.Elizabeth@epa.gov](mailto:Kopits.Elizabeth@epa.gov)>  
**Subject:** RE: Updated Landfills NSPS Stay Cost Memo

Aaron,

Please see the attached files which include the revised cost memo addressing your comments and an updated version of the FRN notice.

Please let me know if you have any additional comments or questions.

Thanks,  
Robin

Robin Dunkins, Group Leader  
Natural Resources Group  
OAR/OAQPS/SPPD Mail Code: E143-03  
U.S. Environmental Protection Agency  
Research Triangle Park, NC 27711  
919-541-5335  
[dunkins.robin@epa.gov](mailto:dunkins.robin@epa.gov)

---

**From:** Szabo, Aaron L. EOP/OMB [<mailto:Aaron.L.Szabo@omb.eop.gov>]  
**Sent:** Thursday, July 20, 2017 2:08 PM  
**To:** Culligan, Kevin <[Culligan.Kevin@epa.gov](mailto:Culligan.Kevin@epa.gov)>  
**Cc:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Weatherhead, Darryl <[Weatherhead.Darryl@epa.gov](mailto:Weatherhead.Darryl@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Marten, Alex <[Marten.Alex@epa.gov](mailto:Marten.Alex@epa.gov)>; Kopits, Elizabeth <[Kopits.Elizabeth@epa.gov](mailto:Kopits.Elizabeth@epa.gov)>; Szabo, Aaron L. EOP/OMB <[Aaron.L.Szabo@omb.eop.gov](mailto:Aaron.L.Szabo@omb.eop.gov)>  
**Subject:** RE: Updated Landfills NSPS Stay Cost Memo

Kevin,

Please see below for the following interagency comments on the NSPS stay cost memorandum:

- 1) Reviewer recommends clarifying the language provided within the cost memorandum. Some of the sections could be rewritten to enhance readability and to allow for less technical stakeholders to understand.
- 2) Reviewer recommends revising the following sentence on page 3 to state:
  - a. Therefore, under the assumptions of **profit maximizing** producers ~~rationality, perfect information, and the absence of transaction costs~~, firms may elect to install GCCS systems prior to the required compliance date so that earlier product recovery can help offset the inevitable capital costs.

Please let me know if you have any comments or questions.

**Aaron L. Szabo**  
Policy Analyst  
Office of Information and Regulatory Affairs  
Office of Management and Budget  
202-395-3621  
[Aaron.L.Szabo@omb.eop.gov](mailto:Aaron.L.Szabo@omb.eop.gov)

---

**From:** Culligan, Kevin [<mailto:Culligan.Kevin@epa.gov>]  
**Sent:** Friday, July 14, 2017 12:54 PM  
**To:** Szabo, Aaron L. EOP/OMB <[Aaron.L.Szabo@omb.eop.gov](mailto:Aaron.L.Szabo@omb.eop.gov)>  
**Cc:** Dunkins, Robin <[Dunkins.Robin@epa.gov](mailto:Dunkins.Robin@epa.gov)>; Weatherhead, Darryl <[Weatherhead.Darryl@epa.gov](mailto:Weatherhead.Darryl@epa.gov)>; McGartland, Al <[McGartland.Al@epa.gov](mailto:McGartland.Al@epa.gov)>; Marten, Alex <[Marten.Alex@epa.gov](mailto:Marten.Alex@epa.gov)>; Kopits, Elizabeth <[Kopits.Elizabeth@epa.gov](mailto:Kopits.Elizabeth@epa.gov)>  
**Subject:** Updated Landfills NSPS Stay Cost Memo

Per my voice mail

Message

---

**From:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]  
**Sent:** 7/17/2017 11:09:59 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]  
**CC:** Schwab, Justin [schwab.justin@epa.gov]  
**Subject:** FW: NESHAP for Off-Site Waste and Recovery Operations - deadline for signature is this Thursday 7/20  
**Attachments:** OSWRO Action Memo 2017.docx; OSWRO fact sheetfinal.docx; OSWRO preamble and reg text12Jul17.docx

**Importance:** High

I know you both have all the attached, but so you know from my end. I'm good with this. Happy to discuss further if needed.

---

**From:** Lewis, Josh  
**Sent:** Monday, July 17, 2017 12:17 PM  
**To:** Gunasekara, Mandy ; Knapp, Kristien  
**Cc:** Dunham, Sarah ; Cyran, Carissa ; Dominguez, Alexander  
**Subject:** NESHAP for Off-Site Waste and Recovery Operations - deadline for signature is this Thursday 7/20  
**Importance:** High

The proposed rule is with OP for review/approval. We'll keep you posted on any updates we hear from OP.

An action memo, fact sheet, and the preamble/reg text are attached. Call or email if you have questions.

Josh



**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 63**

**[EPA-HQ-OAR-2012-0360, FRL-9965-18-OAR]**

**RIN 2060-AT48**

**National Emission Standards for Hazardous Air Pollutants: Off-Site Waste and Recovery Operations**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** This action proposes amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Off-Site Waste and Recovery Operations (OSWRO). The proposed amendments address an issue related to monitoring pressure relief devices (PRDs) on containers. This issue was raised in a petition for reconsideration of the amendments to the OSWRO NESHAP finalized in 2015 based on the residual risk and technology review (RTR). Among other things, the 2015 amendments established additional monitoring requirements for all PRDs, including PRDs on containers. For PRDs on containers, these monitoring requirements were in addition to the inspection and monitoring requirements for containers and their closure devices, which include PRDs that were already required by the OSWRO NESHAP. This proposed action would remove the additional monitoring requirements for PRDs on containers that resulted from the 2015 amendments because we have determined that they are not necessary. This action, if finalized as proposed, would not substantially change the level of environmental protection provided under the OSWRO NESHAP. The proposed amendments would reduce capital costs related to compliance to this industry by \$28 million compared to the current rule.

Total annualized costs, at an interest rate of 7 percent, would be reduced by \$4.2 million per year. These costs are associated with a present value of \$39 million dollars, discounted at 7 percent over 15 years.

**DATES:** Written comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, unless a public hearing is requested on this proposed rule. If a public hearing is requested, the EPA must receive written comments within 30 days after the public hearing is held.

*Public Hearing.* If requested by **[INSERT DATE 7 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, the EPA will hold a public hearing to accept oral comments on this proposed action. To request a hearing, to register to speak at a hearing, or to inquire if a hearing will be held, please contact Virginia Hunt at (919) 541-0832 or by email at [hunt.virginia@epa.gov](mailto:hunt.virginia@epa.gov). The EPA will post all information regarding any public hearing on this proposed action, including whether a hearing will be held, its location, date, and time, if applicable, and any updates online at <https://www.epa.gov/stationary-sources-air-pollution/site-waste-and-recovery-operations-oswro-national-emission>. In addition, you may contact Angie Carey at (919) 541-2187 or by email at [carey.angela@epa.gov](mailto:carey.angela@epa.gov) with public hearing inquiries. The EPA does not intend to publish any future notices in the **Federal Register** regarding a public hearing on this proposed action and directs all inquiries regarding a hearing to the Web site and contact person identified above.

**ADDRESSES: Comments.** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2012-0360 at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from <http://www.regulations.gov>. The U.S. Environmental Protection Agency (EPA) may publish any

comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** For questions about this proposed action, please contact Ms. Angie Carey, Sector Policies and Programs Division (E143-01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-2187; fax number: (919) 541-0246; email address: [carey.angela@epa.gov](mailto:carey.angela@epa.gov). For information about the applicability of the NESHAP to a particular entity, contact Ms. Marcia Mia, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, EPA WJC South Building, Mail Code 2227A, 1200 Pennsylvania Avenue, NW, Washington DC 20460; telephone number: (202) 564-7042; fax number: (202) 564-0050; and email address: [mia.marcia@epa.gov](mailto:mia.marcia@epa.gov).

**SUPPLEMENTARY INFORMATION:**

*Docket.* The EPA has established a docket for this rulemaking under Docket ID No. EPA-HQ-OAR-2012-0360. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, *e.g.*, CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted

material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

*Instructions:* Direct your comments to Docket ID No. EPA-HQ-OAR-2012-0360. The EPA's policy is that all comments received will be included in the public docket without change and will be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. Send or deliver information identified as CBI only to the following address: OAQPS Document Control Officer (C404-02), Office of Air Quality Planning and Standards, U.S. EPA, Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA-HQ-OAR-2012-0360. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on a disk or CD-ROM that you mail to the EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information you claim as CBI. In addition to one complete version of the comment that includes information claimed as CBI, you must submit a copy of the comment that does not contain the information claimed as CBI for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in the Code of Federal Regulations (CFR) at 40 CFR part 2.

The <http://www.regulations.gov> Web site is an “anonymous access” system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any electronic storage media you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA’s public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/dockets>.

*Preamble Acronyms and Abbreviations.* Multiple acronyms and terms are used in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

|        |                                                           |
|--------|-----------------------------------------------------------|
| ACC    | American Chemistry Council                                |
| CAA    | Clean Air Act                                             |
| CBI    | Confidential Business Information                         |
| CFR    | Code of Federal Regulations                               |
| DOT    | Department of Transportation                              |
| EPA    | Environmental Protection Agency                           |
| ETC    | Environmental Technology Council                          |
| FR     | Federal Register                                          |
| HAP    | Hazardous air pollutants                                  |
| MACT   | Maximum achievable control technology                     |
| NESHAP | National emissions standards for hazardous air pollutants |
| OAQPS  | Office of Air Quality Planning and Standards              |
| OMB    | Office of Management and Budget                           |
| OSWRO  | Off-site waste and recovery operations                    |
| PRD    | Pressure relief device                                    |
| RCRA   | Resource Conservation and Recovery Act                    |

RTR Residual risk and technology review  
TSDF Treatment, storage and disposal facilities

*Organization of this Document.* The information in this preamble is organized as follows:

I. General Information

- A. What is the source of authority for the reconsideration action?
- B. Does this action apply to me?
- C. Where can I get a copy of this document and other related information?

II. Background

III. Proposed Revisions to PRD Requirements

IV. Summary of Cost, Environmental, and Economic Impacts

- A. What are the affected sources?
- B. What are the air quality impacts?
- C. What are the cost impacts?
- D. What are the economic impacts?
- E. What are the benefits?

V. Statutory and Executive Order Reviews

- A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act (PRA)
- C. Regulatory Flexibility Act (RFA)
- D. Unfunded Mandates Reform Act (UMRA)
- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
- G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
- H. Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act (NTTAA)
- J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

**I. General Information**

*A. What is the source of authority for the reconsideration action?*

The statutory authority for this action is provided by sections 112 and 307(d)(7)(B) of the Clean Air Act (CAA) (42 U.S.C. 7412 and 7607(d)(7)(B)).

*B. Does this action apply to me?*

Categories and entities potentially regulated by this action include, but are not limited to, businesses or government agencies that operate any of the following: hazardous waste treatment, treatment storage and disposal facilities (TSDF); Resource Conservation and Recovery Act (RCRA) exempt hazardous wastewater treatment facilities; nonhazardous wastewater treatment facilities other than publicly-owned treatment works; used solvent recovery plants; RCRA exempt hazardous waste recycling operations; and used oil re-refineries.

To determine whether your facility is affected, you should examine the applicability criteria in 40 CFR 63.680 of subpart DD. If you have any questions regarding the applicability of any aspect of these NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

*C. Where can I get a copy of this document and other related information?*

In addition to being available in the docket, an electronic copy of this action is available on the Internet. A redline version of the regulatory language that incorporates the proposed changes in this action is available in the docket for this action (Docket ID No. EPA-HQ-OAR-2012-0360). Following signature by the EPA Administrator, the EPA will post a copy of this proposed action at <https://www.epa.gov/stationary-sources-air-pollution/site-waste-and-recovery-operations-oswro-national-emission>. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the proposed action at this same Web site. Other key technical documents related to this proposal will be available in the docket when the **Federal Register** version of the proposal is posted to the docket. Only the version as published in the **Federal Register** will represent the official EPA proposal.

## II. Background

On March 18, 2015, the EPA promulgated a final rule amending the OSWRO NESHAP based on the RTR conducted for the OSWRO source category (80 FR 14248). In that final rule, the EPA amended the OSWRO NESHAP to revise provisions related to emissions during periods of startup, shutdown, and malfunction; to add requirements for electronic reporting of performance testing; to add monitoring requirements for PRDs; to revise routine maintenance provisions; to clarify provisions for open-ended valves and lines and for some performance test methods and procedures; and to make several minor clarifications and corrections. After publication of the final rule, the EPA received a petition for reconsideration submitted jointly by Eastman Chemical Company and the American Chemical Council (ACC) (dated May 18, 2015). This petition sought reconsideration of two of the amended provisions of the OSWRO NESHAP: (1) the equipment leak provisions for connectors, and (2) the requirement to monitor PRDs on containers. The EPA considered the petition and supporting information along with information contained in the OSWRO NESHAP amendment rulemaking docket (Docket ID No. EPA-HQ-OAR-2012-0360) in reaching a decision on the petition. The Agency granted reconsideration of the PRD monitoring requirement in letters to the petitioners dated February 8, 2016. In separate letters to the petitioners dated May 5, 2016, the Administrator denied reconsideration of the equipment leak provisions for connectors and explained the reasons for the denial in these letters. These letters are available in the OSWRO NESHAP amendment rulemaking docket. The EPA also published a **Federal Register** notice on May 16, 2016 (81 FR 30182), informing the public of these responses to the petition. On May 18, 2015, ACC filed a petition for judicial review of



the OSWRO NESHAP RTR<sup>1</sup> challenging numerous provisions in the final rule, including the issues identified in the petition for administrative reconsideration. In 2016, the EPA and ACC reached an agreement to resolve that case. Specifically, the parties agreed to a settlement under which ACC agrees to dismiss its petition for review of the 2015 final rule if the EPA completes its reconsideration of certain PRD provisions in accordance with an agreed-upon schedule.<sup>2</sup>

As a result of our reconsideration, the Agency is proposing revised monitoring requirements for PRDs on containers. The EPA is requesting public comments on these proposed revisions.

### **III. Proposed Revisions to PRD Requirements**

In October 2016, two industry trade groups, ACC and the Environmental Technology Council (ETC), gathered and provided the EPA with data related to stationary process PRDs and PRDs on containers for 19 facilities owned by eight companies. The provided data cover calendar years 2013 – 2015 and include general PRD information, such as the number of PRDs at the facility, the PRDs' set pressure, and the type of equipment the PRDs are on (*i.e.*, stationary equipment or containers). For containers, additional information was provided, including the type and size of the container and the average length of time the containers are onsite before they are emptied. The data also include PRD release information, such as the number of release events that occurred from 2013 – 2015 and the quantity of emissions from each release event. The companies also identified methods employed to monitor PRD releases, to prevent and control PRD releases, and the perceived effectiveness of these methods. Other data were also

---

<sup>1</sup> United States Court of Appeals for the District of Columbia Circuit, Case Number 15-1146. Eastman Chemical Company also filed a petition for judicial review of the OSWRO NESHAP RTR, but sought and was granted voluntary dismissal in September 2016.

<sup>2</sup> In accordance with section 113(g) of the CAA (42 U.S.C. § 7413(g)), the EPA provided notice and the opportunity for comment on the settlement by publishing a notice in the **Federal Register** on December 19, 2016 (81 FR 91931). The settlement agreement was finalized on June 15, 2017.

provided about the costs to control PRD releases, the impact of force majeure events on PRD releases, types of root cause analyses conducted after a PRD release occurs, PRD inspection frequency, and existing regulations that currently apply to PRDs at OSWRO facilities. The data provided to the EPA by ACC and ETC are available in the docket for this action.

The March 18, 2015, final amendments to the OSWRO NESHAP include requirements for facilities to monitor PRDs, and since the rule does not distinguish between PRDs on stationary process equipment and those on containers, the monitoring requirements apply to all PRDs. The rule requires a monitoring system capable of: (1) identifying a pressure release, (2) recording the time and duration of each pressure release, and (3) immediately notifying operators that a pressure release is occurring. Containers used in OSWRO operations include small containers, such as pressurized cylinders and 55-gallon drums, and large containers, such as railcars and over-the-road tanker vehicles. The petition for reconsideration identified concerns regarding the monitoring requirements as they pertain to PRDs on containers and stated that, because containers are frequently moved around the facility and are received from many different off-site locations, it would be difficult, if not impossible, to design and implement a monitoring system for containers that would meet the 2015 rule requirements.

In reevaluating the PRD monitoring requirements in the 2015 rule as they pertain to containers, we considered what other requirements pertain to these containers and the PRDs on them and the data submitted by ACC and ETC. First, we reviewed the OSWRO NESHAP requirements for containers at 40 CFR 63.688. Depending on the size of the container, the vapor pressure of the container contents, and how the container is used (*i.e.*, for temporary storage and/or transport of the material versus waste stabilization), the rule requires the OSWRO owners and operators to follow the requirements for either Container Level 1, 2, or 3 control

requirements as specified in the Container NESHAP at 40 CFR part 63, subpart PP. Each control level specifies requirements to ensure the integrity of the container and its ability to contain its contents (*e.g.*, requirements to meet U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation, or vapor tightness as determined by EPA Method 21, or no detectable leaks as determined by EPA Method 27); requirements for covers and closure devices (which include pressure relief valves as that term is defined in the Container NESHAP at 40 CFR 63.921); and inspection and monitoring requirements for containers and their covers and closure devices pursuant to the Container NESHAP at 40 CFR 63.926. The inspection and monitoring requirements for containers at 40 CFR 63.926, which are already incorporated into the OSWRO NESHAP by 40 CFR 63.688, require that unless the container is emptied within 24 hours of its receipt at the OSWRO facility, the OSWRO owner/operator is required on or before they sign the shipping manifest accepting a container to visually inspect the container and its cover and closure devices (which include PRDs). If a defect of the container, cover, or closure device is identified, the Container NESHAP specify the time period within which the container must be either emptied or repaired. The Container NESHAP require subsequent annual inspection of the container, its cover, and closure devices in the case where a container remains at the facility and has been unopened for a period of 1 year or more.

Therefore, the PRD continuous monitoring requirements in the 2015 OSWRO NESHAP at 40 CFR 63.691(c)(3)(i) are in addition to PRD monitoring requirements (as closure devices) already in the OSWRO NESHAP per the Container requirements at 40 CFR 63.688, which incorporate the inspection and monitoring requirements of the subpart PP Container NESHAP. In addition, nearly all OSWRO containers are subject to DOT regulatory requirements to ensure their safe design, construction, and operation while in transport. The DOT regulations at 49 CFR part 178,

Specifications for Packagings or 49 CFR part 179, Specifications for Tank Cars, prescribe specific design, manufacturing, and testing requirements for containers that will be transported by motor vehicles. In addition, 49 CFR part 180, Continuing Qualification and Maintenance of Packagings, requires periodic inspections, testing, and repair of containers, which would minimize the chance of an atmospheric release from a PRD.

Second, we reviewed the dataset provided by ACC and ETC for PRDs on containers includes information for 19 facilities. The types of containers identified in this dataset include pressurized cylinders, drums, tote-tanks, cargo tanks, isotainers, railcars, and tank vehicles, and the containers with PRDs onsite at any one time can be zero or several hundred. The data from ACC and ETC show that containers with PRDs can range in size from a few hundred gallons to up to 25,000 gallons for rail cars, with set pressures (*i.e.*, the pressure at which the PRD is designed to open to relieve excess pressure in the container) varying between 2.5 and 100 pounds per square inch. For OSWRO, the information the EPA reviewed shows that containers remain onsite until the contents can be unloaded, which can vary depending on the operational activities at the facility, and based on the data provided by ACC and ETC, is generally less than 2 weeks. In addition, the data reviewed by the EPA indicate that OSWRO containers are constantly changing (*i.e.*, moving in and out of inventory), and they are frequently moved around the site, depending on storage area capacity and the queue for offloading. Due to the transitory nature of these containers, it would be difficult to design and implement a system to monitor each individual container PRD. These facilities had an annual average of 229 containers with PRDs at the facility site for some period of time during the year. The 3 years of data we received show that there was only one PRD on a container that had an emissions release event. The relief event that occurred was while nitrogen pressure was being applied to a tank truck to off-load waste

material. The leak resulted in approximately 40 pounds of volatile organic compounds, of which about 0.4 pounds was an OSWRO NESHAP Table 1, hazardous air pollutant (HAP), over a duration of about 8.5 hours.

Besides this one PRD release event, no other facilities reported a PRD release in the data provided to the EPA. The one reported release was due to pressure being applied to the tank during material off-loading. No facility reported releases that occurred during storage or transport of the container within the facility. All of these facilities are subject to the subpart PP Container NESHAP inspection requirements, as described above, and did not report detecting any PRD releases or defective conditions during these inspections. An open or defective PRD would be detected by the subpart PP inspection requirements. The EPA's understanding, based substantially on its review of the data provided by ACC and ETC, is that PRD releases from containers are rare, the emissions potential from PRDs on these containers is low, and the additional monitoring requirements for PRDs on the containers that would be required under the 2015 OSWRO NESHAP would be difficult. In addition, the costs for the continuous monitoring requirements in the 2015 rule for PRDs on containers would be very high relative to the low emissions potential. See section IV.C of this preamble for a discussion on the projected costs for a facility to comply with the PRD continuous monitoring requirements on containers in the 2015 OSWRO NESHAP.

Based on the above considerations, we have determined that the PRD inspection and monitoring requirements in the Container NESHAP that are already incorporated into the container requirements of the OSWRO NESHAP are effective and sufficient given the high cost and difficulty of conducting continuous monitoring as contemplated by 40 CFR 63.691(c)(3)(i) and the low emissions potential from containers at OSWRO facilities. Therefore, we are

proposing that PRDs on OSWRO containers will not be subject to the monitoring requirements at 40 CFR 63.691(c)(3)(i), and we are soliciting comment on our assessment and proposal regarding these PRD monitoring requirements.

The EPA is also soliciting comment on whether to impose more frequent inspections for any filled or partially-filled OSWRO container that remains onsite longer than 60 days.

Although the data reviewed show that typically most containers are onsite for less than 2 weeks, there may be instances when, due to facility operations, containers remain onsite and filled or partially-filled for a longer period of time. The EPA is soliciting comment on whether a container that remains onsite for a longer period of time should be required to be visually inspected at a set time, and on an established timeframe thereafter, as long as it remains filled, or partially-filled and onsite. Additionally, the EPA is accepting comment on whether any additional inspection requirements should apply to all containers or only apply to larger containers. Finally, the EPA is also accepting comment on whether to also incorporate the RCRA subpart BB (Air Emission Standards for Equipment Leaks) and subpart CC (Air Emission Standards for Tanks, Surface Impoundments, and Containers) of 40 CFR part 264 and 265 inspection requirements for RCRA permitted and interim status facilities, as these weekly inspections could help facilities identify leaking and or deteriorating containers or cover and closure devices and could help identify any PRD leaks. If the EPA incorporates additional inspection or monitoring requirements as outlined above, we are also soliciting comment on whether to require associated recordkeeping and reporting obligations.

We are not proposing any other amendments to the OSWRO NESHAP as it pertains to PRDs on containers. Specifically, we are not proposing to alter the requirement that PRDs on containers not release HAP emissions directly to the atmosphere. If a PRD release occurs as a

result of a defect of the container, cover, or closure device (which includes PRDs), the owner or operator would be subject to the requirements in the Container NESHAP at 40 CFR 63.926(a)(3), as referenced from the OSWRO NESHAP at 63.688, that require emptying of the container or repair within a specified time period. Further, if a PRD fails to re-seat itself, this would also likely be considered a defect in the PRD and, therefore, would be subject to the same requirements in the Container NESHAP at 63.926(a)(3).

We are also not proposing any changes to the requirements for owners and operators to quantify the amount of Table 1 HAP emissions associated with a release from a PRD as those requirements at 40 CFR 63.691(c)(3)(ii) apply to PRDs on containers or to the requirements to report such releases at 63.697(b)(5). We are not proposing changes to these requirements since they allow calculations based on process knowledge, and do not require that calculations be based on monitoring conducted pursuant at 63.691(c)(3)(i).

#### **IV. Summary of Cost, Environmental, and Economic Impacts**

##### *A. What are the affected sources?*

We estimate that 49 existing sources would be affected by the revised monitoring requirements being proposed in this action.

##### *B. What are the air quality impacts?*

We are proposing revised requirements for PRD monitoring on containers on the basis that the inspection and monitoring requirements in 40 CFR part 63, subpart PP incorporated into the OSWRO NESHAP are sufficient. We project that the proposed standard would not result in any change in emissions compared to the existing OSWRO NESHAP.

*C. What are the cost impacts?*

When the OSWRO NESHAP were finalized in 2015, the EPA was not aware of equipment meeting the definition of a PRD on containers in the OSWRO industry, and costs associated with the PRD release event prohibition and monitoring requirements were not estimated for this equipment. Therefore, the capital and annualized costs in the 2015 final rule were underestimated, as these costs were not included. To determine the impacts of the 2015 final rule, considering the monitoring requirements for PRDs on containers based on the data now available to the EPA from ACC and ETC, we have estimated the costs and the potential emission reductions associated with wireless PRD monitors for containers. Using vendor estimates for wireless PRD monitor costs, we estimate that the capital costs per facility with the average number of containers with PRDs would be approximately \$570,000, and the capital costs for the industry (49 facilities) would be approximately \$28 million. The total annualized costs per facility (assuming a 15-year equipment life and a 7- percent interest rate) are estimated to be approximately \$85,000 and approximately \$4.2 million for the industry. Therefore, by removing the requirement to monitor PRDs on containers, we estimate the impact of our proposal to be an annual reduction of \$4.2 million. Cost information, including wireless PRD monitor costs, is available in the docket for this action.

*D. What are the economic impacts?*

We performed a national economic impact analysis for the 49 OSWRO facilities affected by this proposed rule. The updated national costs under this reconsideration, accounting for the data provided by ACC and the ETC, are \$1.3 million in capital costs in 2018, or \$200,000 in total annualized costs under a 7-percent interest rate (\$170,000 million in total annualized costs



under a 3-percent interest rate).<sup>3</sup> After updating the baseline costs of the PRD monitoring requirements as written in the 2015 rule, in consideration of the data provided by ACC and the ETC, this reconsideration constitutes a \$28 million reduction in the capital cost or a \$4.2 million reduction in annualized costs assuming an interest rate of 7-percent (\$3.4 million reduction in annualized costs assuming an interest rate of 3-percent). These costs can be seen in Table 1.

Table 1. Re-estimated Cost and Reconsideration Cost (\$2016, millions)

|                                  | Capital<br>Costs | Total Annualized Costs |             |
|----------------------------------|------------------|------------------------|-------------|
|                                  |                  | 7%                     | 3%          |
| Re-estimated Cost (New Baseline) | 29               | 4.4                    | 3.6         |
| Reconsidered Cost                | 1.3              | 0.20                   | 0.17        |
| <i>Burden Reduction</i>          | <i>-28</i>       | <i>-4.2</i>            | <i>-3.4</i> |

Note: Estimates rounded to 2 significant figures. Totals may not sum due to rounding.

In terms of the present value of the costs, the reconsidered requirements compared to the re-estimated costs of the promulgated rule (the new baseline) constitute a decrease of \$39 million under a 7-percent discount rate (\$42 million under a 3-percent discount rate). In terms of the equivalent annualized values, this reconsideration constitutes \$4.3 million dollars annually at a 7-percent discount rate (\$3.5 million annually at a 3-percent discount rate) in reduced compliance costs compared to the new baseline estimation.<sup>4</sup> These values can be seen in Table 2, below.

Table 2. Re-estimated PRD Promulgated Cost and Reconsideration Cost (\$2016, millions)

|                                | Re-estimated Cost<br>(New Baseline) |       | Reconsidered<br>Cost |        | Burden Reduction |        |
|--------------------------------|-------------------------------------|-------|----------------------|--------|------------------|--------|
|                                | 7%                                  | 3%    | 7%                   | 3%     | 7%               | 3%     |
| Present Value                  | \$41                                | \$44  | \$1.9                | \$2.0  | -\$39            | -\$42  |
| Equivalent Annualized<br>Value | \$4.5                               | \$3.7 | \$0.20               | \$0.17 | -\$4.3           | -\$3.5 |

Note: These values are estimated over 15 years. Totals may not sum due to rounding.

<sup>3</sup> We assume affected facilities will start incurring costs in 2018, after the final rule is finalized.

<sup>4</sup> The equivalent annualized value represents the even flow of the present value of costs over the technical life of the monitors.

More information and details of this analysis, including the conclusions stated above, are provided in the technical document, “Economic Impact Analysis for the Proposed Reconsideration of the 2015 NESHAP: Off-Site Waste and Recovery Operations,” which is available in the rulemaking docket.

*E. What are the benefits?*

We project that the proposed standard would not result in any change in emissions compared to the existing OSWRO NESHAP.

**V. Statutory and Executive Order Reviews**

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

*A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

*B. Paperwork Reduction Act (PRA)*

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations at 40 CFR part 63, subpart DD under the provisions of the PRA, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 1717.11. The proposed amendments removed monitoring requirements for PRDs on containers, and these proposed amendments do not affect the estimated information collection burden of the existing rule. You can find a copy of the Information Collection Request in the docket at Docket ID No. EPA-HQ-OAR-2012-0360 for this rule.

*C. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the small entities subject to the rule. This rule relieves regulatory burden by reducing compliance costs associated with monitoring PRDs on containers. The Agency has determined that of the 28 firms that own the 49 facilities in the OSWRO source category, two firms, or 7 percent, can be classified as small firms. The cost to sales ratio of the reconsidered cost of the monitoring requirements for these two firms is significantly less than 1 percent. In addition, this action constitutes a burden reduction compared to the re-estimated costs of the 2015 rule as promulgated. We have, therefore, concluded that this action does not have a significant impact on a substantial number of small entities. For more information, see the “Economic Impact Analysis for the Proposed Reconsideration of the 2015 NESHAP: Off-Site Waste and Recovery Operations,” which is available in the rulemaking docket.

*D. Unfunded Mandates Reform Act (UMRA)*

This action does not contain an unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, tribal governments, or the private sector.

*E. Executive Order 13132: Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

*F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments*

This action does not have tribal implications as specified in Executive Order 13175. This action will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

*G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks*

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. The EPA's risk assessments for the 2015 final rule (Docket ID No. EPA-HQ-OAR-2012-0360) demonstrate that the current regulations are associated with an acceptable level of risk and provide an ample margin of safety to protect public health and prevent adverse environmental effects. This proposed action would not alter those conclusions.

*H. Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use*

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

*I. National Technology Transfer and Advancement Act (NTTAA)*

This rulemaking does not involve technical standards.

*J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*

The EPA believes that this action does **not** have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

In the 2015 final rule, the EPA determined that the current health risks posed by emissions from this source category are acceptable and provide an ample margin of safety to protect public health and prevent adverse environmental effects. To gain a better understanding of the source category and near source populations, the EPA conducted a proximity analysis for OSWRO facilities prior to proposal in 2014 to identify any overrepresentation of minority, low income, or indigenous populations. This analysis gave an indication of the prevalence of sub-populations that might be exposed to air pollution from the sources. We revised this analysis to include four additional OSWRO facilities that the EPA learned about after proposal for the 2015 rule. The EPA determined that the final rule would not have disproportionately high and adverse human health or environmental effects on minority, low income, or indigenous populations. The revised proximity analysis results and the details concerning its development are presented in the memorandum titled, *Updated Environmental Justice Review: Off-Site Waste and Recovery Operations RTR*, available in the docket for this action (Docket Document ID No. EPA-HQ-OAR-2012-0360-0109). This proposed action would not alter the conclusions made in the 2015 final rule regarding this analysis.

**List of Subjects in 40 CFR Part 63**

Environmental protection, Administrative practice and procedure, Air pollution control,  
Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated:\_\_\_\_\_.

\_\_\_\_\_  
E. Scott Pruitt,  
Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

**PART 63-NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR  
POLLUTANTS FOR SOURCE CATEGORIES**

1. The authority citation for part 63 continues to read as follows:

**Authority:** 42 U.S.C. 7401, *et seq.*

**Subpart DD—National Emission Standards for Hazardous Air Pollutants for Hazardous  
Air Pollutants from Off-Site Waste and Recovery Operations**

2. Section 63.691 is amended by revising paragraph (c)(3) introductory text to read as follows:

**§63.691 Standards: Equipment leaks.**

\* \* \* \* \*

(c) \* \* \*

(3) *Pressure release management.* Except as provided in paragraph (c)(4) of this section, emissions of HAP listed in Table 1 of this subpart may not be discharged directly to the atmosphere from pressure relief devices in off-site material service, and according to the date an affected source commenced construction or reconstruction and the date an affected source receives off-site material for the first time, as established in § 63.680(e)(i) through (iii) of this subpart, the owner or operator must comply with the requirements specified in paragraphs (c)(3)(i) and (ii) of this section for all pressure relief devices in off-site material service, except that containers are not subject to the obligations in (c)(3)(i) of this section.

\* \* \* \* \*

Message

---

**From:** Dravis, Samantha [dravis.samantha@epa.gov]  
**Sent:** 7/28/2017 7:39:39 PM  
**To:** Jackson, Ryan [jackson.ryan@epa.gov]; Knapp, Kristien [Knapp.Kristien@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Burden, Susan [Burden.Susan@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]  
**Subject:** FW: SIGNATURE NEEDED Fwd: The Alon USA-Bakersfield Refinery Title V Petition Order signature deadline is Monday (7/31)  
**Attachments:** Alon Claims II III Order 7-12-17.docx; ATT00001.htm; alon\_petition2014\_0.pdf; ATT00002.htm

The Administrator signed off on this and it needs to be autopenned today. Please move forward.

---

**From:** Schwab, Justin  
**Sent:** Friday, July 28, 2017 3:33 PM  
**To:** Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>  
**Subject:** SIGNATURE NEEDED Fwd: The Alon USA-Bakersfield Refinery Title V Petition Order signature deadline is Monday (7/31)

See below. Order denying Title V petition needs to be signed by Monday. Please let me know if you have any questions.

Sent from my iPhone

Begin forwarded message:

**From:** "Lee, Michael" <lee.michaelg@epa.gov>  
**To:** "Schwab, Justin" <schwab.justin@epa.gov>  
**Cc:** "Srinivasan, Gautam" <Srinivasan.Gautam@epa.gov>, "Conrad, Daniel" <conrad.daniel@epa.gov>  
**Subject:** The Alon USA-Bakersfield Refinery Title V Petition Order signature deadline is Monday (7/31)

Justin,

I just wanted to remind you that our Settlement Agreement deadline for the Administrator to sign the "Alon" order is Monday, July 31. You acknowledged receipt of the draft order denying claims II and III of the petition (these are the only remaining claims if the Administrator meets the signature deadline) through the Correspondence Tracking System this past Monday (thank you!), but ARLO and OAQPS staff have not heard anything from the Administrator's office indicating that signature is imminent.

Mike

Michael G. Lee | U.S. Environmental Protection Agency  
Office of General Counsel | (202) 564-5486

---

**From:** Lewis, Josh  
**Sent:** Monday, July 17, 2017 12:10 PM  
**To:** Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>  
**Cc:** Dunham, Sarah <Dunham.Sarah@epa.gov>; Knapp, Kristien <Knapp.Kristien@epa.gov>; Cyran, Carissa <Cyran.Carissa@epa.gov>; Lee, Michael <lee.michaelg@epa.gov>  
**Subject:** Latest on the Alon USA-Bakersfield Refinery Title V Petition Order

Mandy and Justin,



Sarah has signed off on the Alon Title V petition order and the package has moved out of OAR...next stop the 3<sup>rd</sup> Floor. I'm attaching the incoming petition and the draft order for your review/approval.

As a reminder, this one has a settlement agreement deadline of July 31 for signature.

Josh

**BEFORE THE ADMINISTRATOR  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

---

In the matter of:

Alon USA – Bakersfield Refinery Crude Oil Flexibility Project  
Project # S-1134224 & S-1134223  
Proposed Authority to Construct / Certificate of Conformity

Issued by the San Joaquin Valley Air Pollution Control District

---

**PETITION TO OBJECT TO ISSUANCE OF AUTHORITY TO CONSTRUCT /  
CERTIFICATE OF CONFORMITY FOR THE ALON BAKERSFIELD CRUDE OIL  
FLEXIBILITY PROJECT**

Pursuant to section 505 of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), 40 C.F.R. §§ 70.7 and 70.8(d), and San Joaquin Valley Air Pollution Control District (“Air District”) Rule 2201, Association of Irrigated Residents, Center for Biological Diversity, and the Sierra Club hereby petition the Administrator of the U.S. Environmental Protection Agency (“Administrator” or EPA) to object to the San Joaquin Valley Air Pollution Control District’s proposed issuance of an Authority to Construct / Certificate of Conformity (the “Permit”) for the Alon USA – Bakersfield Refinery Crude Oil Flexibility Project, Facility # S-33 & S-3303, Project # S-1134224 & S-1134223.

The Administrator must object to the Permit because it (1) fails to consider and apply Best Available Control Technology; (2) fails to properly calculate the emissions increase that must be offset because it relies on an improper emissions baseline; (3) severely underestimates the Project’s emissions of volatile organic compounds by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery; (4) improperly exempts from emissions offset requirements existing heaters that will be retrofitted; and (5) relies on invalid emissions reduction credits for all other emissions increases.

**INTRODUCTION**

The Alon Bakersfield Crude Oil Flexibility Project (the “Project”) entails a five-fold increase in the Alon Bakersfield Refinery’s (“Refinery”) capacity to import crude oil from 40 tank cars per day to 208 tank cars per day, or up to 63.1 million barrels of crude per year (over 173,000 barrels per day). As a result of this Project, millions of barrels of volatile Bakken crude oils will be hauled through California’s most sensitive areas and treacherous passages, ultimately ending up in our most pollution-burdened communities for intensive refining. This influx of cheap, mid-continent crudes, including Bakken crude from North Dakota and Canadian tar sands, will allow the shuttered Refinery to reopen and run at full capacity, processing 70,000

barrels of crude oil per day. Restarting the Refinery—which has been mostly idle since 2008—will significantly increase harmful air pollution that will only exacerbate the poor air quality and respiratory illnesses that plague San Joaquin Valley communities already unfairly burdened with industrial pollution. Further, the massive ramp-up in crude imports will significantly increase greenhouse gas emissions and the risk of catastrophic accidents and oil spills along the rail transport route.

Unfortunately, the Air District’s preliminary decision on the Authority to Construct does not meet New Source Review requirements under District Rule 2201. It fails to consider and apply Best Available Control Technology (“BACT”) to the Project’s new emissions units or those units undergoing major modifications, including new and modified floating roof tanks, new boilers, and new pumps and compressors. These units are expected to emit significant levels of oxides of nitrogen (“NOx”) and volatile organic compounds (“VOC”), which result in the formation of ozone, for which the Valley is already in “extreme” nonattainment. Given existing unhealthy air quality that already exacts an enormous toll on Valley residents in the form of chronic respiratory illnesses, emergency room visits, premature death, missed school days, medical bills, lost wages, and reduced worker productivity, the application of BACT to these new and modified units is imperative.

The emissions offsets analysis for the proposed Authority to Construct is also improper. The analysis fails to properly calculate the emissions increase that must be offset because it erroneously relies on a 2008 baseline that does not represent normal non-operational conditions at the Refinery. In addition, it severely underestimates the Project’s VOC emissions by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery. The analysis also improperly exempts from emissions offset requirements existing heaters that will be retrofitted and relies on invalid emissions reduction credits (“ERCs”) for all other emissions increases. The failure to properly offset the Project’s emissions increases will only result in further deterioration of the Valley’s air and put attainment of air quality standards further out of reach.

## **PETITIONERS**

Petitioner Association of Irrigated Residents (“AIR”) is a California non-profit corporation based in Kern County. AIR formed in 2001 to advocate for clean air and environmental justice in San Joaquin Valley communities. AIR has several dozen members who reside in Kern, Tulare, Kings, Fresno, and Stanislaus Counties. AIR members through themselves, their families, and friends, have direct experience with the many health impacts that arise from the type of pollution emissions associated with this Project.

Petitioner Center for Biological Diversity (the “Center”) is a non-profit corporation with offices in San Francisco, Los Angeles, and elsewhere throughout California and the United States. The Center is actively involved in environmental protection issues throughout California and North America and has over 50,000 members, including many throughout California and in Kern County. The Center’s mission includes protecting and restoring habitat and populations of imperiled species, reducing greenhouse gas pollution to preserve a safe climate, and protecting air quality, water quality, and public health. The Center’s members and staff include individuals

who regularly use and intend to continue to use the areas in Kern County and elsewhere affected by the Project's refinery operations and rail transportation activities, including members who are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the Project.

Sierra Club is a national nonprofit organization of approximately 600,000 members. Sierra Club is dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and encouraging humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club's particular interest in this case and the issues which the case concerns stem from Sierra Club's interests in reducing reliance on fossil fuels and protecting the health of vulnerable communities. Sierra Club has approximately 600 members in Kern County and many more along the crude-by-rail transport route for this Project. These members live, work, and recreate in counties that are affected by the proposed crude-by-rail and Refinery operations.

### **PROCEDURAL BACKGROUND**

On October 25, 2013, Alon USA Energy Inc. ("Alon") applied to the Air District for an Authority to Construct permit and Certificate of Conformity to modify its Bakersfield refinery and expand the refinery's crude rail terminal. The Air District published notice of its preliminary decision on the project on October 14, 2014, triggering a 30-day comment period on the preliminary decision. Public comments were due on November 19, 2014. *See* Authority to Construct Application Review, PDF 1 (Exhibit 1). The Air District e-mailed the preliminary decision to EPA on October 14, 2014, triggering a 45-day review period by EPA, ending on November 28, 2014. *See* Authority to Construct Application Review, PDF 1 (Exhibit 1). EPA did not object to the issuance of the Permit or otherwise submit comments.

This petition is timely because it is filed within sixty days of the expiration of EPA's 45-day review period, as required by section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2) and Air District Rule 2201 § 5.9.1.7. The Administrator must grant or deny this petition within sixty days after it is filed. *See id.* In compliance with section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), and Air District Rule 2201 §5.9.1.7, this petition is based on objections that were raised during the public comment period. Petitioners' comment letter is attached as Exhibit 2.

### **GROUND FOR OBJECTIONS**

Petitioners request that the Administrator object to the Permit because it does not comply with 40 C.F.R. Part 70 and Air District Rule 2201. In particular, it (1) fails to consider and apply BACT to the Project's new emissions units or those units undergoing major modifications, including new and modified floating roof tanks, new boilers, and new pumps and compressors; (2) fails to properly calculate the emissions increase that must be offset because it erroneously relies on a 2008 baseline that does not represent normal non-operational conditions at the Refinery; (3) severely underestimates the Project's VOC emissions, by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery; (4) improperly

exempts from emissions offset requirements existing heaters that will be retrofitted; and (5) relies on invalid emissions reduction credits for all other emissions increases.

## **I. The Authority to Construct Fails to Apply BACT.**

The proposed Permit fails to apply BACT to new floating roof tanks, boilers, and compressors and pumps, despite the District's determination that BACT is triggered for each of these units. BACT is "the most stringent emission limitation or control technique of the following": "[a]chieved in practice for such category and class of source;" "[c]ontained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source"; "[c]ontained in an applicable federal New Source Performance Standard"; or "[a]ny other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source." Rule 2201 § 3.10. Generally, BACT is required for new or modified emissions units that result in emissions exceeding certain thresholds. *See generally* Rule 2201 § 4.0. Because the Permit fails to apply BACT, the Administrator must object to the Permit.

### **A. Stricter Volatile Organic Compound Control Systems and Geodesic Domes Must Be Applied to the Floating Roof Tanks.**

The Authority to Construct does not apply BACT on floating roof tanks that store volatile substances, such as Bakken crude. The new tanks' VOC emissions will be subject to "95% control of VOC emissions, through use of primary metal shoe seal with secondary wiper, or equivalent." Authority to Construct Application Review, Crude Oil Flexibility Project ("Application Review"), PDF 38 (Exhibit 1). The Bay Area Air Quality Management District ("BAAQMD"), however, has determined that a "[v]apor recovery system w/ an overall system efficiency > 98%" is "technologically feasible" and "cost effective."<sup>1</sup> (emphasis added).

The Authority to Construct also fails to require geodesic domes to reduce VOC emissions from floating roof tanks. These domes on floating roof tanks are feasible, satisfy best available control technology, and are widely used. The BAAQMD BACT Guidelines specify that "a dome is required for tanks that meet all of the following: 1) capacity greater than or equal to 19,815 gallons [approximately 629 barrels] 2) located at a facility with greater than 20 tpy VOC emissions since the year 2000 and 3) storing a material with a vapor pressure equal to or greater than 3 psia (except for crude oil tanks that are permitted to contain more than 97% by volume crude oil)." Ex. A. The 250,000-barrel external floating roof tanks are 397 times the volume of the BAAQMD threshold and will certainly exceed a vapor pressure of 3psia when storing light crude oils, such as Bakken, Eagle Ford, and Permian Basin crude oils.

---

<sup>1</sup> The BAAQMD BACT Guidelines are available at <http://hank.baaqmd.gov/pmt/bactworkbook/>. Relevant portions are attached as Exhibit A.

Over 10,000 aluminum domes have been installed on petrochemical storage tanks in the United States.<sup>2</sup> For example, at the ExxonMobil Torrance Refinery, the refinery

completed the process of covering all floating roof tanks with geodesic domes to reduce volatile organic compound (VOCs) emissions from facility storage tanks in 2008. By installing domes on our storage tanks, we've reduced our VOC emissions from these tanks by 80 percent. These domes, installed on tanks that are used to store gasoline and other similar petroleum-derived materials, help reduce VOC emissions by blocking much of the wind that constantly flows across the tank roofs, thus decreasing evaporation from these tanks.<sup>3</sup>

A similar project to increase crude storage capacity, recently proposed at the Phillips 66 Los Angeles Carson Refinery, required external floating roof tanks with geodesic domes to store crude oil with an RVP of 11.<sup>4</sup> The Negative Declaration for this project assumed these tanks would store crude oil with a TVP <11 psi.<sup>5</sup> The RVP would be even higher. The ConocoPhillips Wilmington Refinery added a geodesic dome to an existing oil storage tank to satisfy BACT.<sup>6</sup> Similarly, Chevron proposed<sup>7</sup> to use domes on several existing tanks to mitigate VOC emission increases at its Richmond Refinery.<sup>8</sup> The U.S. Department of Justice CITGO Consent Decree

---

<sup>2</sup> M. Doxey and M. Trinidad, Aluminum Geodesic Dome Roof for Both New and Tank Retrofit Projects, Materials Forum, v. 30, 2006, available at: [http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164\\_169.pdf](http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164_169.pdf) (Exhibit B).

<sup>3</sup> Torrance Refinery: An Overview of our Environmental and Social Programs, 2010, available at: [http://www.exxonmobil.com/NA-English/Files/About\\_Where\\_Ref\\_TorranceReport.pdf](http://www.exxonmobil.com/NA-English/Files/About_Where_Ref_TorranceReport.pdf) (Exhibit C).

<sup>4</sup> See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Table 1-1, Draft Negative Declaration, available at <http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/draftnd-p66storage.pdf> (Exhibit D).

<sup>5</sup> *Ibid.*

<sup>6</sup> SCAQMD Letter to G. Rios, December 4, 2009, available at: [http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/\\$FILE/ATTTOA6X.pdf](http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/$FILE/ATTTOA6X.pdf)/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf (Exhibit E).

<sup>7</sup> City of Richmond, Chevron Refinery Modernization Project, Environmental Impact Report, Volume 1: Draft EIR, March 2014 (Chevron DEIR), available at: <http://chevronmodernization.com/project-documents/>.

<sup>8</sup> Chevron DEIR, Chapter 4.3, available at: [http://chevronmodernization.com/wp-content/uploads/2014/03/4.3\\_Air-Quality.pdf](http://chevronmodernization.com/wp-content/uploads/2014/03/4.3_Air-Quality.pdf) (Exhibit F).

required a geodesic dome on a gasoline storage tank at the Lamont, Texas refinery.<sup>9</sup> Further, numerous vendors have provided geodesic domes for refinery tanks.<sup>10</sup>

These numerous applications of geodesic domes to control VOC emissions from refinery storage tanks satisfy the “achieved in practice” test for BACT. Thus, geodesic domes must be required to satisfy BACT for the new and modified storage tanks under SJVAPCD Rule 2201.

Finally, because VOC emissions have been severely underestimated, *see* section III below, the potential amount of emissions to be reduced by the above VOC-controls is much greater than what the District’s initial emissions estimates might indicate, and must be included when determining BACT. Because the Permit fails to comply with BACT requirements for the storage tanks, the Administrator must object to the Permit.

#### **B. The BACT Analysis for the New Boilers Is Incomplete.**

The BACT analysis for the three new boilers is flawed, failing to demonstrate that NO<sub>x</sub>, carbon monoxide (“CO”), and hydrogen sulfide emissions will be reduced to the extent feasible.

##### **1. NO<sub>x</sub> Selective Catalytic Reduction**

With respect to the boilers’ NO<sub>x</sub> emissions, the District’s Application Review concludes that 6 ppmv at 3% O<sub>2</sub> using low-NO<sub>x</sub> burners is BACT. The top-down BACT analysis, however, rules out the application of selective catalytic reduction (“SCR”) (which would achieve 5 ppmv NO<sub>x</sub> at 3% O<sub>2</sub>), because the cost of reducing emissions using this technology does not meet the District’s cost-effectiveness threshold of \$24,500 per ton. Application Review, PDF 478-79. The District’s calculations show that the cost-effectiveness is only \$58,198 per ton. *Ibid.* These calculations, however, do not explain or justify the underlying assumptions, precluding a meaningful assessment of the cost-effectiveness analysis. For example, the calculations state that an equipment life of 10 years is assumed. But in Alon’s original application and BACT analysis for the project, Alon assumed a 20-year equipment life. *See* Ex. J. Indeed, the “capital recovery factor”( $i[1+i]^n/[1+i]^n - 1$ ) used in Alon’s analysis is much lower (0.0944) than the one used by the District (0.1627). EPA’s Air Pollution Control Cost Manual also provides an example calculation of SCR cost-effectiveness using a 20-year equipment life and 7% interest rate,

---

<sup>9</sup> CITGO Petroleum Corp. Clean Air Act Settlement, available at: <http://www2.epa.gov/enforcement/citgo-petroleum-corporation-clean-air-act-settlement> (Exhibit G).

<sup>10</sup> *See, e.g.,* Aluminum Geodesic Dome, available at: <http://tankaluminumcover.com/Aluminum-Geodesic-Dome>; Larco Storage Tank Equipments, available at: [http://www.larco.fr/aluminum\\_domes.html](http://www.larco.fr/aluminum_domes.html); Vacono Dome, available at: [http://www.easyfairs.com/uploads/tx\\_ef/VACONODOME\\_2014.pdf](http://www.easyfairs.com/uploads/tx_ef/VACONODOME_2014.pdf); Peksay Ltd., available at: [http://www.peksay.info/oil\\_terminals/geodesic\\_domes.htm](http://www.peksay.info/oil_terminals/geodesic_domes.htm); United Industries Group, Inc., available at: <http://www.thomasnet.com/productsearch/item/10039789-13068-1008-1008/united-industries-group-inc/geodesic-aluminum-dome-roofs/> (Exhibit H).

resulting in a cost recovery factor of 0.0944.<sup>11</sup> Using this lower capital recovery factor in the District's calculations results in a much more cost-effective emissions reduction of \$33,757.44 per ton. However, as explained further below, the 7% interest rate is outdated and a 20-year lifetime is not realistic.

In a March 2014 presentation by the South Coast Air Quality Management District ("SCAQMD") concerning the cost-effectiveness of SCR for refineries, the SCAQMD's analysis (using the same levelized cash flow method used by the District) assumed a 4% interest rate and 25-year life of the equipment.<sup>12</sup> These assumptions are more realistic than Alon's or the District's. Alon's financial reports indicate that it is capable of securing capital at an interest rate lower than 4%.<sup>13</sup> And as explained by refinery expert Dr. Phyllis Fox in comments on a cost-effectiveness analysis of SCR in a similar context, "[f]or these types of analyses, the Office of Management and Budget ("OMB") directs that a real interest rate be used [i.e., adjusted to remove the effects of inflation and to reflect the real costs of funds to the borrower]. When the [EPA] Cost Control Manual was developed, the real interest rate was 7%. However, the latest real interest rate for cost-effectiveness analyses published by OMB is 1.9% for a 30-year period."<sup>14</sup> Thus, even a 4% interest rate is highly conservative.

With respect to the equipment lifetime, ample evidence indicates that SCR typically has a lifetime of 30 years or more. A study of the economic risks from SCR operation at the Detroit Edison Monroe power plant, for example, used 30 years as the anticipated lifetime.<sup>15</sup> Further, in

---

<sup>11</sup> EPA Pollution Control Cost Manual, Sixth Edition (January 2002), available at [http://www.epa.gov/ttn/catc1/dir1/c\\_allchs.pdf](http://www.epa.gov/ttn/catc1/dir1/c_allchs.pdf) (Exhibit K).

<sup>12</sup> See NOx RECLAIM Working Group Meeting, March 18, 2014, p. 13, available at <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/regxx/reclaimwgm031814.pdf?sfvrsn=2> (Exhibit L).

<sup>13</sup> See Alon U.S.A. Energy, Inc., Form 10-K for Fiscal Year 2013, March 2014, PDF 79, 92 available at <http://www.sec.gov/Archives/edgar/data/1325955/000132595514000013/alj-20131231x10k.htm> (Exhibit M); Alon U.S.A. Energy, Inc., Form 10-Q, 9/30/2014, available at <http://quote.morningstar.com/stock-filing/Quarterly-Report/2014/9/30/t.aspx?t=XNYS:ALJ&ft=10-Q&d=acdd8e2f9a21686b6e4d53b46613845b>, p. 10 (noting interest rate swap agreements resulting in average fixed interest rate of 0.25% in 2014; 0.60% in 2015; 1.47% in 2016; 2.35% in 2017; 3.09% in 2018 and 3.28% thereafter); *id.*, p. 16 (noting recent loan agreement at annual rate of LIBOR plus 3.75% margin) (Exhibit N [PDF 18, 30]).

<sup>14</sup> Fox, Phyllis, Report on Hydrogen Cyanide Emissions From Fluid Catalytic Cracking Units (October 28, 2014), pp. 23-24 (Exhibit O), citing OMB Circular No. A-94, Appendix C, Revised February 7, 2014, available at: <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2014/m-14-05.pdf> (Exhibit P). Dr. Fox's resume is attached as Exhibit Q.

<sup>15</sup> S.D. Unwin and others, Selective Catalytic Reduction (SCR) System Design and Operations: Quantitative Risk Analysis of Options, Presented at CCPS 17th Annual International Conference: Risk, Reliability, and Security, p. 3, available at: <http://www.unwin-co.com/files%5CSCR-Risk-Paper,CCPS-RRS2002.pdf> (Exhibit R).



EPA's response to comments on the approval of a final rule determining that SCR was the "best available retrofit technology" and "most cost-effective" technology for the San Juan Generating Station, a coal-fired power plant in New Mexico, EPA justified a 30-year lifetime of the SCR assumed in its cost-effective analysis:

The lifetime of an SCR, which is a metal frame packed with catalyst modules, is equal to the lifetime of the boiler, which might easily be over 60 years. *The lifetime of a retrofit SCR is generally set equal to the remaining useful life of the facility.* The record is silent on the remaining useful life of the [San Jaun Generating Station] units. Further, USGS studies of the coal reserves upon which the [San Juan Generating Station] relies indicate that the local coal supply is adequate to support a remaining useful life of 30 years. Many utilities routinely specify 30+ year lifetimes in requests for proposal and to evaluate proposals. In fact, an analysis prepared by [Black & Veatch] for another facility assumed a 40 year SCR lifetime. And finally, Sargent & Lundy assumed a design life of 30 years for the nearby Navajo Generating Station which burns a similar coal. We conclude there is nothing in the record to support a 20 year lifetime for the SCR and believe a 30 year lifetime is justified.<sup>16</sup>

Here, the expected life of the project is 30 years.<sup>17</sup> It is therefore reasonable to assume that the remaining useful life of the facility and of the SCR equipment is at least 30 years.<sup>18</sup>

Using the more realistic assumptions of a 30-year equipment life and a 1.9% real interest rate results in a capital recovery ratio of 0.044 and a cost-effectiveness of \$15,748.11 per ton, which meets the District's cost-effectiveness threshold. Even the more conservative assumptions of a 4% interest rate and 25-year lifetime results in a capital recovery ratio of 0.064 and a cost-effectiveness of \$22,890.68 per ton, which also meets the District's cost-effectiveness threshold. In light of the above evidence showing that the District improperly calculated the cost-effectiveness of SCR, the Administrator must object to the Permit.

---

<sup>16</sup> "Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination; Final Rule," 76 Fed. Reg. 52388, 52402 (Aug. 22, 2011), available at <http://www.gpo.gov/fdsys/pkg/FR-2011-08-22/pdf/2011-20682.pdf> (Exhibit S).

<sup>17</sup> Kern County Draft Environmental Impact Report, Alon Bakersfield Refinery Crude Flexibility Project ("DEIR") (May 2014), pp. 4.5-14, 4.5-15, 4.6-59, available at [http://www.co.kern.ca.us/planning/pdfs/eirs/alon\\_flexibility\\_project/Alon\\_DEIR\\_Vol1.pdf](http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_DEIR_Vol1.pdf) (Exhibit T).

<sup>18</sup> See also Ex. O, pp. 22-23 (Fox report noting SCR is typically designed for a lifetime of 30 years and citing papers indicating SCRs that have been operational since as early as 1986); Selective Catalytic Reduction of NOx From Fluid Catalytic Cracking Case Study: BP

Whiting Refinery (April 2002), available at <http://www.cormetech.com/brochures/env-03-128%20-%20kunz%2000%20Whiting%20Refinery%20FCC.pdf> (Exhibit KK [PDF 6, 15, 19]) (indicating SCRs operational since as early as 1986).

## 2. *Low Temperature Oxidation*

Low temperature oxidation ("LTO") has achieved emissions controls comparable to that of SCR, but the District's analysis did not consider this technology in its BACT analysis. For example, a 16.4-MMBtu/hr Cleaver Brooks CB700 fire-tube boiler was permitted in February 1992 at 40 ppm NO<sub>x</sub> at 3% O<sub>2</sub>. The boiler was subsequently equipped with LTO in October 1996 as a demonstration project. "The LTO system utilizes ozone to oxidize and control various pollutants, including NO<sub>x</sub>. The LTO system process includes (1) the recovery of waste heat from the flue gas, (2) the oxidation of NO<sub>x</sub> and CO, (3) the absorption of higher nitrogen and sulfur oxides formed in a scrubber solution, and (4) removal of ozone slip."<sup>19</sup>

Source tests demonstrated that LTO achieved a NO<sub>x</sub> limit of 5 ppm at 3% O<sub>2</sub>.<sup>20</sup> The SCAQMD's Mobile Source Test Vehicle (MSTV 1) was used to collect and continuously analyze flue gases at the exhaust stack of the LTO system. NO<sub>x</sub> and CO concentrations were recorded every minute. The analysis of these data shows that NO<sub>x</sub> concentrations were consistently below 5 ppmvd at 3% O<sub>2</sub>,<sup>21</sup> which corresponds to 0.0061 lb/MMBtu.<sup>22</sup> The Administrator must object to the Permit because the District's BACT analysis does not take into account the availability of LTO.

## 3. *CO*

With respect to CO emissions from boilers, Appendix D of the Air District's Authority to Construct Application Review contains no top-down BACT analysis showing how the District concluded that an emissions limit of 50 ppmv CO at 3% O<sub>2</sub> is BACT. Application Review PDF 38 (Exhibit I); *see* Appendix D to Application Review, PDF 477-81.

In addition, lower emission rates are technologically feasible. Oxidation catalysts are used on many combustion sources outside of the refining industry.<sup>23</sup> These catalysts can remove over 90% of the CO and VOCs and represent the top technology for CO and VOC control for

---

<sup>19</sup> South Coast Air Quality Management District, LAER/BACT Determination for Application No. 343185, available at <http://www.aqmd.gov/docs/default-source/bact/laer-bact-determinations/other-technologies/laer-bact-determination-259724.pdf?sfvrsn=2> (Exhibit U).

<sup>20</sup> *See* Best Available Control Technology Determination Data Submitted to the California Air Pollution Control Officers Association BACT Clearinghouse, available at <http://www.arb.ca.gov/bact/bact1to3.htm> (Alta Dena Dairy) (Exhibit V [PDF 23]).

<sup>21</sup> Ex. U.

<sup>22</sup> NO<sub>x</sub> emission rate (lb/MMBtu) = [(NO<sub>x</sub> concentration in exhaust gas (ppmvd) × 10E-6 × NO<sub>x</sub> molecular weight (lb/lb mole) × F factor in dscf/MMBtu)/[specific molar volume of exhaust gas at standard reference temperature (scf/lb mole)]] × [oxygen correction] = [(5 × 10E-6 × 46.01 × 8710) / 385.3][(20.9% / (20.9% - 3%))] = 0.0061 lb/MMBtu.

<sup>23</sup> BASF, Oxidation Catalysts for Power Generation, available at <http://www.catalysts.basf.com/p02/USWeb-Internet/catalysts/en/content/microsites/catalysts/prods-inds/stationary-emissions/catco-pow-gen> (Exhibit I).

refinery heaters and boilers. Assuming uncontrolled CO limits of 10 ppm for large heaters and 50 ppm for small heaters, BACT for CO should be no more than 1 ppmvd (15-minute average) for the large heaters and 5 ppmvd (3-hour average) for the small heaters. Because the Air District has not properly shown the CO limits for the boilers is BACT, the Administrator must object to the Permit.

#### **4. *Hydrogen Sulfide***

Regarding the boilers' sulfur emissions, the District fails to impose any limits on hydrogen sulfide when such controls are feasible. The District's Application Review states that "[n]atural gas with a fuel sulfur content no greater than 5 grains total sulfur/100 scf" constitutes BACT, but makes no mention of a hydrogen sulfide limit. While Alon will meet the total sulfur requirement by firing the new boilers "on PUC regulated natural gas as supplied to them by the utility company," and such gas is limited to a hydrogen-sulfide content of 0.25 grain per 100 standard cubic feet,<sup>24</sup> or 80 ppmv hydrogen sulfide,<sup>25</sup> a lower limit is feasible. The BAAQMD BACT Guidelines have determined that "Natural Gas or Treated Refinery Gas Fuel w/ <.50 ppmv Hydrogen Sulfide" is "cost effective" and "technologically feasible." Ex. A. The Administrator must object to the Permit for failure to impose feasible hydrogen sulfide limits.

#### **C. *Stricter Fugitive Emissions Standards for Pumps and Compressors Are Feasible.***

For fugitive emissions from pumps and compressors, the District's BACT analysis concludes that a "[l]eak defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455" constitutes BACT. However, this standard does not specify how those emissions will be controlled to ensure leaks do not exceed this limit, and more stringent standards are feasible. Under the BAAQMD BACT Guidelines, a limit of "100 ppm expressed as methane measured using EPA Reference Method" is technologically feasible and cost effective for both compressors and pumps. Ex. A. The Administrator must object to the Permit for failure to impose feasible limits on fugitive emissions from pumps and compressors.

### **II. *The Air District's Calculation of Baseline Emissions Violates District Rule 2201 and Does Not Represent Normal Source Operation.***

The Air District has chosen the calendar year 2008 as the baseline year for purposes of calculating the project's "increases in stationary source emissions" for emissions offset purposes. *See* Application Review, Appendix F, PDF 491 (Exhibit 1) ("Baseline period taken to be calendar year 2008, in accordance with Rule 2201 § 3.9, as described in the ATC application.").

---

<sup>24</sup> *See* General Order 58-A titled "Standards For Gas Service In The State of California," title 7(a), (b), available at: [http://docs.cpuc.ca.gov/PUBLISHED/GENERAL\\_ORDER/54827.PDF](http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/54827.PDF) (Exhibit W).

<sup>25</sup> *See* Santa Barbara County Air Pollution Control District, Frequently Asked Questions, available at: <http://www.ourair.org/eng/tech/frequently-asked-questions/> (noting PUC's hydrogen sulfide limit for natural gas is equivalent to 80 ppmv hydrogen sulfide) (Exhibit X).

Because this baseline violates District Rule 2201 and does not represent normal source operation, the Administrator must object to the Permit.

In order to determine the refinery's baseline air emissions under the Air District's New and Modified Stationary Source Review Rule, Rule 2201, the Air District had two options applicable here.<sup>26</sup> It could choose either:

3.9.1 the two consecutive years of operation immediately prior to the submission date of the Complete Application; or

3.9.2 at least two consecutive years within the five years immediately prior to the submission date of the Complete Application if determined by the APCO as more representative of normal source operation. . . .

The Authority to Construct application was submitted on October 25, 2013. Thus, under Rule 2201, the Air District could have chosen as the baseline years either (1) October 25, 2011-October 25, 2013; or (2) any two or more consecutive years between October 25, 2008 and October 25, 2013 if the Air District determined these years were more representative of normal source operation. Instead of complying with Rule 2201, however, the Air District erroneously chose the period from January 1, 2008 to December 31, 2008—outside of the timeframe allowed by the rule and shorter than the required period of two consecutive years.

Because no crude refining operations have occurred since December 2008, the Authority to Construct should have reflected a baseline of zero emissions (years 2009-2010) as the most "representative of normal source operation." Conditions at the Refinery have changed dramatically since 2008. Although the plant was designed to refine crude oil, it went into bankruptcy on December 21, 2008 and stopped processing crude and other feedstock; it was still non-operational when purchased by Alon USA in 2010.<sup>27</sup> Following the change in ownership, the plant was refashioned to convert intermediate vacuum gas oil into finished products, rather than process crude oil.<sup>28</sup>

The Refinery only began operating again in this limited capacity in June 2011, after two-and-half years of being shut down.<sup>29</sup> No crude refining operations were resumed.<sup>30</sup> In 2012, gas oil processing operations were "intermittent," only occurring "from June to early November." DEIR, p. 3-19. The average throughput in 2011 and 2012 was only 10,915 and 4,751 bpd, or

---

<sup>26</sup> The other two options under Rule 2201 for calculating the baseline emissions don't apply ("3.9.3 a shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or 3.9.4 zero years if an emissions unit has been in operation for less than one year (only for use when calculating AER)."). The emissions units evaluated were either in place for more than one year or newly proposed.

<sup>27</sup> See Alon USA, Annual Report (Form 10-K) (March 14, 2013), PDF 47 (Exhibit Y).

<sup>28</sup> See Alon USA, Quarterly Report (Form 10-Q) (Aug. 8, 2011), PDF 35 (Exhibit Z).

<sup>29</sup> See Alon USA, Quarterly Report (Form 10-Q) (May 9, 2012), PDF 33 (Exhibit AA).

<sup>30</sup> *Ibid.*; DEIR, p. 3-19.

15.5% and 6.8% of the Refinery's daily capacity of 70,000 bpd. *Ibid.* Operations were suspended entirely in December 2012.<sup>31</sup> Based on this record, 2008 calendar year operating conditions do not represent the current conditions at the Refinery, and the years the refinery was completely shut down are "more representative of normal source operation." Rule 2201 § 3.9.2.

The Air District has repeatedly recognized that the operation of the refinery more than six years ago is not a representative baseline. On October 14, 2013, the Air District submitted comments on the Notice of Preparation on the DEIR, criticizing Kern County's use of a 2007 baseline as "reflect[ing] the environmental setting in effect 6-7 years ago, which appears to be remote from the conditions in effect at the time the environmental analysis commenced." Ex. CC. Similarly, in response to Alon's request to use years 2007 and 2008 for the purposes of Rule 3170, Chay Thao of the Air District explained in a July 7, 2014 email that:

[I]n the past, operation of the refinery by the previous owner (Big West) was considerably different than operations under Alon USA. In 2007, the facility was owned by Big West and was processing heavy crude oil to produce gasoline and diesel. Operations were then suspended in 2008 after Big West's bankruptcy. Alon USA purchased the facility in 2010 and then applied for Authority to Construct (ATC) permits to modify the facility to process gas oil, instead of heavy crude oil. This application included modifications to the catalytic reformer #1, amine/fuel gas unit, hydrocracker, depentanizer, and unloading rack to accommodate processing of shipped in gas oil. Piping modifications and installation of two additional loading bays to the unloading rack were also authorized. Alon then commenced operation in 2011 to process gas oil. Since then the facility has only operated intermittently.

Based on these changes, year 2007 and 2008 are not representative of normal source operation and therefore cannot be used for the Baseline Period[.]

*See* Ex. DD. As the Air District has repeatedly recognized, 2008 is an inappropriate year for baseline calculations as it does not represent normal operations. The Authority to Construct should have reflected that the refinery ceased operating during the baseline period, and the Administrator must object to the Permit for failure to include a proper baseline, resulting in an underestimate of the Project's required emissions offsets.

### **III. The Assumptions Regarding the Project's Crude Slate Are Flawed.**

The Application Review lists various assumptions used in its calculations of the Project's emissions, but these assumptions are not consistent with the Project's objective to import and

---

<sup>31</sup> Ex. Y, PDF 103; Alon USA, Form 10-Q (May 5, 2014), PDF 11 (noting Alon's California refineries did not process "crude" in 2013 and first quarter of 2014) (Exhibit BB).

process “cost-advantaged” light Bakken crude oil.<sup>32</sup> The Administrator must object to the Permit on the basis that it does not reflect the importation, storage, and processing of the anticipated crude oil processed by the Project.

The Application Review states that the “[c]rude oil density” of crude that will be unloaded with the new railcar unloading rack is “0.915 g/mL (per Applicant),” but this figure does not represent the worst case in terms of VOC emissions. Application Review at 19; *see also id.* (“All liquids transferred will be conservatively assumed to be light crude oil....”).<sup>33</sup> This crude oil density is within the range of heavy crude oil, not light crude oil, which will most likely be unloaded and processed at the Refinery. According to the Transportation Safety Board of Canada’s study of crude oil samples taken from the oil train that derailed in Lac-Mégantic, Quebec, Bakken crude can have a density as low as .8165 g/mL.<sup>34</sup> The National Energy Board of Canada defines light crude oil as having a density equal to, or less than, 875.7 kg/m<sup>3</sup> (or .8757 g/mL) while heavy crude oil is defined as having a density greater than this threshold.<sup>35</sup>

In addition, while the Application Review notes that the Reid Vapor Pressure of the crude oil that will be stored in floating roof tanks is assumed to be 9 psia, this figure is not representative of the vapor pressure of Bakken crude oils, which is more volatile than other light crudes, as explained in the attached report by Dr. Phyllis Fox commenting on the final EIR for the Project. *See* Ex. GG at pp. 4-10 and accompanying references to the comment letter. As Dr. Fox explains, Bakken crude oils typically have a higher Reid vapor pressure than other light crude oils, including a Reid Vapor Pressure of up to 15.5 psia, which results in significantly higher emissions of VOCs and toxic air contaminants (“TAC”). The District’s emissions analysis should have therefore reflected the higher vapor pressure and VOC and TAC emissions of Bakken crude oil. Moreover, tank inspection and monitoring requirements are too weak to ensure that fugitive emissions from the tanks are adequately controlled. District Rule 4623 § 6.1 only provides for tank inspections “on an annual basis” by the District. There are no other monitoring measures to ensure that the Project’s tanks do not exceed the Reid Vapor Pressure assumed in the Air District’s analysis and that fugitive emissions will not exceed the limits set forth in the

---

<sup>32</sup> Kern County Final EIR for the Alon Bakersfield Refinery Crude Flexibility Project, vol. 3, Attachment F, PDF 553, available at [http://www.co.kern.ca.us/planning/pdfs/eirs/alon\\_flexibility\\_project/Alon\\_FEIR\\_Ch7\\_RTC.pdf](http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_FEIR_Ch7_RTC.pdf) (Exhibit EE) (“The Bakken Region will be the most likely source for crude to be transported to the proposed crude oil rail terminal to be located at the Bakersfield Refinery.”); *see also id.*, Attachment E, PDF 489, 528 (discussing Refinery’s shift to lighter Bakken crudes); *id.* PDF 519-20 (noting Bakken crude’s lower cost making it more attractive to process).

<sup>33</sup> The Application Review fails to note the temperature at which this density occurs. Since density is a function of temperature, it is unclear as to what type of crude oil is actually assumed in the District’s analysis.

<sup>34</sup> Transportation Safety Board of Canada, TSB Laboratory Report LP148/2013, section 2.4, available at <http://www.tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/lab/20140306/LP1482013.asp> (Exhibit FF).

<sup>35</sup> *See id.*, section 3.2.5 & notes 42-43 therein.

Authority to Construct. Because the Air District used faulty emissions assumptions that lead to an underestimate of the Project's required offsets, the Administrator must object to the Permit.

#### **IV. The Retrofit of Existing Heaters Are Not Exempt from Emissions Offsets.**

The Application Review notes that because three existing heaters are being retrofitted solely to comply with District rules, the heaters are exempt from emissions offset requirements. However, all of the conditions for this exemption are not met in this case. *See* Section 4.6.8 ("For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met...") This includes condition 4.6.8.1, which requires that "[t]here shall be no increase in the physical or operational design of the *existing facility*, except for those changes to the design needed for the installation or modification of the emission control technique itself." (emphasis added). Here, the existing facility will undergo significant changes in its physical and operational design, including an increase in the Refinery's capacity to unload crude at the rail terminal and an increase in its capacity to refine both heavier and lighter crudes.

These changes will result in increased emissions from the existing heaters that are being retrofitted, which must be offset. According to Alon, at least two of these heaters have been dormant for some time, and under the project, they will be reactivated. *See* Ex. HH (Kern County Environmental Impact Report Appendices noting post-project emissions of 19.44, 9.72, and 22.69 tons per year of CO from existing heaters compared to 0 tons per year under 2007 baseline conditions, and of 3.83, 2.40, and 4.47 tons per year of NO<sub>x</sub> compared to 0.30 tons per year under baseline conditions)<sup>36</sup>; Ex. II at 19 (Project Application noting heaters 21-H21 and 27-H2 were dormant during baseline period).<sup>37</sup> Because these heaters lack emissions offsets, the Administrator must object to the Permit.

#### **V. All of the Emission Reduction Credits Proposed Are Invalid.**

The Air District has proposed to use emission reduction credit (ERC) certificate numbers S-4334-2, S-3465-5, S-3462-4, S-3458-3, and S-3663-1. Application Review at 46. These emission reductions credits come from three separate shutdowns or curtailments at the facility, all of which occurred decades ago: (1) the 1977 incineration of coker exhaust in the CO boiler—almost four decades ago (ERC S-3458-3, and S-3663-1); (2) the 1983 shutdown of the catalytic cracker, fluid coker, and CO boiler—more than three decades ago (ERC S-4334-2 & S-3465-5); and (3) the shutdown of the tailgas incinerator in 1992—more than two decades ago (ERC S-3462-4). *See* Ex. JJ.

---

<sup>36</sup> *See* DEIR volume 2, Appendix B, available at [http://www.co.kern.ca.us/planning/pdfs/eirs/alon\\_flexibility\\_project/Alon\\_DEIR\\_Vol2%20Cultural%20Redactions.pdf](http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_DEIR_Vol2%20Cultural%20Redactions.pdf) (Exhibit HH).

<sup>37</sup> For the same reasons, this modification is neither exempt from BACT. *See* Rule 2201 § 4.2.3 (requiring same conditions for BACT exemption).

Under District Rule 2201 and 2301, emission reductions used as ERCs must be “real, enforceable, quantifiable, surplus, and permanent.” Rule 2201 § 3.2.1; Rule 2301 § 4.1. Given the many changes that have occurred at the refinery since 1977, including the recent shutdown and previous reconfigurations of the refinery, these decades-old reductions are no longer “real” and will not actually offset the refinery’s significant projected air emissions. The notion that these shutdown units could still be operational today and “offset” the existing refinery’s emissions, after the many reconfigurations and shutdowns that the refinery has undergone, is purely fictional.

Moreover, as explained below, all of the ERC credits are either invalid or may not be employed here. Because the Permit does not include valid ERC credits, the Administrator must object to the Permit.

**A. The Air District May Not Employ Banked Offsets for NO<sub>x</sub> and VOC Emissions.**

The Air District proposes to offset the project’s NO<sub>x</sub> and VOC emissions with ERC S-4334-2, for the 1983 “shutdown of catalytic cracker, fluid coker, & CO boiler,” and with ERC S-3663-1, for the 1977 “incineration of coker exhaust in CO boiler.” Ex. JJ. Because the District may not approve the use of offsets for NO<sub>x</sub> and VOC emissions until the 1-hour ozone plan is approved by EPA, the Administrator must object to the issuance of the Permit in reliance on these offsets.

Air District Rule 2201 § 4.13.1 requires that “Major Source shutdowns or permanent curtailments in production or operating hours of a Major Source may not be used as offsets for emissions from . . . a Federal Major Modification . . . unless the ERC, or the emissions from which the ERC are derived, has been included in an EPA-approved attainment plan.”

The San Joaquin Valley air basin is currently designated as in extreme nonattainment with the 1-hour standard for ozone, for which NO<sub>x</sub> and VOC emissions are precursors. The District does not yet have an approved attainment plan for the 1-hour ozone standard. Thus, the Air District may not use these banked emission reduction credits to offset the NO<sub>x</sub> and VOC emissions of this Project.

**B. Emission Reduction Credit Certificates S-3458-3 and S-3663-1 Are Invalid.**

ERC S-3458-3, for CO reduction, and S-3663-1, for VOC reduction, state that they were issued for “incineration of coker exhaust in CO boiler.” Ex. JJ. The authority to construct for the CO boiler was issued on January 12, 1976, and operations began in May of 1977.<sup>38</sup> Because these reductions occurred prior to August 7, 1977, the credit given for these reductions is invalid, and may not be used here to offset project emissions. *See* 40 C.F.R. § 51.165(a)(2)(ii)(C)(1)(ii) (“in no event may credit be given for shutdowns that occurred before August 7, 1977.”).

---

<sup>38</sup> *See* Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit LL).



Both EPA and the California Air Resources Board (CARB) submitted comments on the proposed emission reduction credits, explaining the many reasons why the credits are invalid.<sup>39</sup> Both EPA and CARB pointed out that credits were invalid because the application for banking credit was submitted beyond the required time limits; a completed application was not submitted until October 1985, almost ten years after the reduction occurred. EPA also explained:

The reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest [air quality management plan], the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are not surplus since they occurred so long ago and probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.

Ex. LL. The District did not provide EPA with verification that these reductions were not credited elsewhere. EPA further explained:

The reductions occurred prior to August 7, 1977 and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1977. . . EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purpose.

*Ibid.* EPA warned that “any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action.” *Ibid.*

Because ERCs S-3458-3 and S-3663-1 are invalid and “subject to federal enforcement action” if used, the Administrator must object to the Permit.

### **C. Emission Reduction Credit Certificate S-3462-4 Is Invalid.**

ERC S-3462-4, for PM10 reductions from the March 1992 shutdown of the tailgas incinerator, does not represent the bankable emission reduction from this shutdown, and is therefore invalid.

In the application review for ERC S-3462-4, the Air District explained that the emission reductions eligible for an emission reduction credit certificate include the baseline emissions of the tailgas incinerator reduced by a 10% deposit into the “Community Bank”. *See* Application review at 5 (“10% of AER shall be deposited to the Community Bank; remaining AER qualifies for the ERC Certificate.”) (Exhibit NN). With this reduction, the Air District stated that the Bankable Emission Reductions, available for an ERC Certificate, were:

---

<sup>39</sup> *See* Letter, Raymond E. Menefee, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit LL); Letter, David Howecamp, EPA, to Leon Hebertson, KCAPCD, (July 17, 1987) (Exhibit MM).

|                      |                      |                      |                       |
|----------------------|----------------------|----------------------|-----------------------|
| Quarter 1<br>Jan-Mar | Quarter 2<br>Apr-Jun | Quarter 3<br>Jul-Sep | Quarter 4<br>Oct-Dec. |
| 1,425.41 lbs         | 1,689.42 lbs         | 1611.54 lbs          | 1,776.42 lbs          |

*Id.* at 6. However, the Emission Reduction Certificate issued did not take the 10% reduction into account, and erroneously issued credits as:

|                      |                      |                      |                       |
|----------------------|----------------------|----------------------|-----------------------|
| Quarter 1<br>Jan-Mar | Quarter 2<br>Apr-Jun | Quarter 3<br>Jul-Sep | Quarter 4<br>Oct-Dec. |
| 1,584 lbs            | 1,877 lbs            | 1,791 lbs            | 1,974 lbs             |

See Ex. JJ, ERC S-3462-4. Because this Certificate fails to comply with Air District Rule 2201 § 4.12.1 and 2301 § 4.2.2, it is invalid and the Administrator must object to the Permit.

**D. Emission Reduction Credit Certificate S-4334-2 and S-3465-5 Are Invalid.**

ERCs S-4334-2 and S-3465 state that they were issued for the “shutdown of catalytic cracker, fluid coker, & CO boiler.” Ex. JJ. Because these certificates were originally applied for in 1987, more than 90 days after the 1983 shutdown occurred, the application was not timely filed and the certificates are invalid. See Letter from Leon Hebertson to L.E. Perrier (Aug. 27, 1987) (Exhibit OO).

The Air District acknowledged as much. In a letter on August 27, 1987 to Texaco Refining (the predecessor to the Alon Bakersfield Refinery), the Air District denied Texaco’s original emission reduction credit application as untimely, explaining that:

On July 31, 1987 we received your applications for Emission Reduction Credit Banking Certificates resulting from the November, 1985 [sic] shutdown of the Tosco T.C.C. Unit, Fluid Coker, and CO Boiler. Review of these applications reveals that this request is not timely. Rule 210.3 § C.4.(b) requires applications for banking of emissions reductions to be submitted within 90 days after such reduction occurs. Because your proposal does not comply with this requirement, your applications for Emission Reduction Credits Banking Certificates must be denied within 30 days.

Ex. OO. After Texaco objected to the Air District’s denial, the Air District reversed course and granted the requested emission reduction credits on April 14, 1988. In explaining the change, the Air District capitulated to Texaco’s erroneous interpretation that because Texaco had maintained its operating permit, it had not actually “shutdown,” even though the equipment had last been operated in 1983. Application Review for Application #s 2007130/101, ‘130/201, ‘130/401, ‘130/501, and ‘130/601 (Jan. 14 1988) (Exhibit PP) at 2. This interpretation, however, conflicts with Rule 2301 § 3.14, which defines “shutdown” for the purposes of awarding emission reduction credits as “either the *earlier* of the permanent cessation of emissions from an emitting unit or the surrender of that unit’s operating permit.” (emphasis added).

The Air District had it right the first time: the application was untimely because it was received more than 90 days after the shutdown occurred. ERC certificates S-4334-2 and S-3465 are therefore invalid and may not be used to offset this project's NOx and SOx emissions. Because the Permit fails to include valid emission reduction credits, the Administrator must object to the Permit.

### CONCLUSION

For the foregoing reasons, the proposed Permit does not comply with the Clean Air Act and applicable regulations, and the Administrator must object to the issuance of the Permit.

Dated: December 16, 2014

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Elizabeth Forsyth", with a stylized flourish at the end.

Elizabeth Forsyth  
Wendy Park  
Earthjustice  
50 California St., Suite 500  
San Francisco, CA 94114  
415-217-2000

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA**

---

ENVIRONMENTAL INTEGRITY PROJECT  
1000 Vermont Ave. NW, Suite 1100  
Washington, DC 20005,

TEXAS ENVIRONMENTAL JUSTICE  
ADVOCACY SERVICES  
6733 Harrisburg Blvd  
Houston, TX 77011,

SIERRA CLUB  
1202 San Antonio Street  
Austin, TX 78701, and

AIR ALLIANCE HOUSTON  
3914 Leeland Street  
Houston, TX 77003,

*Plaintiffs,*

v.

SCOTT PRUITT, in his official capacity as  
Administrator, U.S. Environmental Protection  
Agency,  
William Jefferson Clinton Building  
Mail Code 1101A  
1200 Pennsylvania Ave., NW  
Washington, DC 20460,

*Defendant.*

---

Civil Action No. 1:17-cv-1441

**COMPLAINT FOR  
DECLARATORY AND  
INJUNCTIVE RELIEF**

**STATEMENT OF THE CASE**

1. This is a civil action for declaratory and injunctive relief, with costs and fees under the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, and the declaratory judgment statute, 28 U.S.C. §§ 2201, 2202.

2. With this action, Plaintiffs Environmental Integrity Project, Texas Environmental Justice Advocacy Services, Sierra Club, and Air Alliance Houston (“Plaintiffs”) seek an order declaring that the United States Environmental Protection Agency (“EPA”), through the Defendant EPA Administrator Scott Pruitt (“Administrator”) is required, pursuant to 42 U.S.C. § 7661d(b)(2), to grant or deny a petition filed by Plaintiffs. The petition requests that the Administrator object to Title V Permit No. O3711 (“Proposed Permit” or “Permit”), issued by the Texas Commission on Environmental Quality (“TCEQ”) to the Pasadena Refining System Inc. authorizing operation of the company’s Pasadena Refinery. *See* Exhibit A (Petition to Object to Proposed Permit) (attachments omitted). Plaintiffs also seek an order requiring the Administrator to perform his non-discretionary duty to grant or deny this petition.

### **JURISDICTION, VENUE, AND NOTICE**

3. This is a Clean Air Act citizen suit. Thus, this Court has subject matter jurisdiction over the claims set forth in this complaint pursuant to the citizen suit provision of the Clean Air Act, 42 U.S.C. § 7604(a), and has the authority to award attorneys’ fees pursuant to 42 U.S.C. § 7604(d). The Clean Air Act is a federal statute. The Administrator is an agent of the United States government. Thus, this Court has subject matter jurisdiction over the claims set forth in this complaint pursuant to 28 U.S.C. §§ 1331 (federal question) and 1346 (United States as defendant). This case does not concern federal taxes, is not a proceeding under 11 U.S.C. §§ 505 or 1146, nor does it involve the Tariff Act of 1930. Thus, this Court has authority to order the declaratory relief requested under 28 U.S.C. § 2201. If the Court orders such relief, 28 U.S.C. § 2202 authorizes this Court to issue injunctive relief and 28 U.S.C. § 2412 authorizes this Court to award Plaintiffs their costs and attorneys’ fees.

4. A substantial part of the alleged events or omissions giving rise to Plaintiffs' claims occurred in the District of Columbia. In addition, this suit is being brought against the Administrator in his official capacity as an officer or employee of the United States Environmental Protection Agency, residing in the District of Columbia. Thus, venue is proper in this Court, pursuant to 28 U.S.C. § 1391(e).

5. As required by 42 U.S.C. § 7604(b)(1)(A), Plaintiffs notified the Administrator of the EPA of the violations alleged in this complaint and of Plaintiffs' intent to sue, via certified first-class mail on February 14, 2017. *See* Exhibit B (Notice of Intent to Sue Acting Administrator McCabe for her Failure to Timely Grant or Deny a Petition to Object to Part 70 Operating Permit No. O3711) (attachments omitted). More than 60 days have passed since the Administrator received this notice of intent to sue letter. The Administrator has not acted to remedy the violations alleged in this complaint. Therefore, an actual controversy exists between the parties.

## **PARTIES**

### The Plaintiffs

6. Plaintiff ENVIRONMENTAL INTEGRITY PROJECT ("EIP") is a non-profit, non-partisan watchdog organization that advocates for effective enforcement of environmental laws. EIP has three goals: (1) to illustrate through objective facts and figures how the failure to enforce and implement environmental laws increases pollution and harms public health; (2) to hold federal and state agencies, as well as individual corporations accountable for failing to enforce or comply with environmental laws; and (3) to help local communities obtain protections guaranteed by environmental laws. The Environmental Integrity Project has offices and programs in Austin, Texas and Washington, D.C.

7. Plaintiff TEXAS ENVIRONMENTAL JUSTICE ADVOCACY SERVICES is a Houston-area non-profit organization dedicated to providing community members with the tools

necessary to create sustainable, environmentally healthy communities by educating individuals on health concerns and implications arising from environmental pollution, empowering individuals with an understanding of applicable environmental laws and regulations and promoting their enforcement, and offering community building skills and resources for effective community action and greater public participation.

8. Plaintiff SIERRA CLUB is a national nonprofit organization with 67 chapters and over 635,000 members dedicated to exploring, enjoying, and protecting the wild places of earth; to practicing and promoting the responsible use of earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club petitioned the Administrator to object to Title V Permit No. O3711, because the permit fails to comply with applicable Clean Air Act requirements. The Administrator's failure to perform his non-discretionary duty to grant or deny this petition injures the organizational interests of Sierra Club as well as the concrete public health interests of its members.

9. Plaintiff AIR ALLIANCE HOUSTON is a 501(c)(3) non-profit organization whose mission is to reduce air pollution in the Houston region and protect public health and environmental integrity through research, education, and advocacy. Air Alliance Houston is active throughout the greater Houston area, with a particular focus on the communities and industry around the Houston Ship Channel.

10. Plaintiffs have an interest in ensuring that Pasadena Refining's Title V operating permit complies with all applicable federal requirements. Members and employees of Plaintiff organizations live, work, and recreate in areas that are affected by air pollution from the Pasadena

Refinery. These members and employees, as well as Plaintiff organizations, will be adversely affected if EPA fails to object to Pasadena Refining's Title V permit.

The Defendant

11. Defendant SCOTT PRUITT is the Administrator of the Environmental Protection Agency. The Administrator is responsible for implementing and enforcing the Clean Air Act. As described below, the Clean Air Act assigns to the Administrator a non-discretionary duty to grant or deny timely filed Title V petitions within 60 days.

12. For the foregoing reasons, the Administrator's failure to respond to Plaintiffs' petition has caused, is causing, and unless this Court grants the requested relief, will continue to cause Plaintiffs concrete injuries that the Court can redress through this case.

**LEGAL AUTHORITY**

13. The Clean Air Act is designed to protect and enhance the quality of the nation's air so as to promote the public health and welfare and productive capacity of its population. 42 U.S.C. § 7401(b)(1). To advance this goal, Congress amended the Act in 1990 to establish the Title V operating permit program. *See* 42 U.S.C. §§ 7661-7661f. Title V of the Clean Air Act provides that "[a]fter the effective date of any permit program approved or promulgated under this subchapter, it shall be unlawful for any person to violate any requirement of a permit issued under this subchapter, or to operate . . . a major source . . . except in compliance with a permit issued by a permitting authority under this subchapter. 42 U.S.C. § 7661a(a).

14. The Pasadena Refinery is a major source subject to Title V permitting requirements.

15. The Clean Air Act provides that the Administrator may approve a state's program to administer the Title V operating permit program with respect to sources within its borders. 42 U.S.C. § 7661a(d). The Administrator approved Texas's administration of its Title V operating



permit program. 61 Fed. Reg. 32693 (June 25, 1996); 66 Fed. Reg. 66318 (December 6, 2001). Thus, the TCEQ is responsible for issuing Title V operating permits in Texas.

16. Before the TCEQ may issue, modify, or renew a Title V permit, it must forward the proposed permit to EPA for review. 42 U.S.C. § 7661d(a)(1)(B). The Administrator then has 45 days to review the proposed permit. The Administrator must object to the permit if he finds that it does not comply with all applicable provisions of the Clean Air Act. 42 U.S.C. § 7661d(b)(1). If the Administrator does not object to the permit during EPA's 45-day review period, "any person may petition the Administrator within 60 days" to object to the permit. 42 U.S.C. § 7661d(b)(2).

17. If a petition is timely filed, the Administrator has a non-discretionary duty to grant or deny it within 60 days. *Id.*

18. The Clean Air Act authorizes citizen suits "against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator." 42 U.S.C. § 7604(a)(2).

### **FACTUAL BACKGROUND**

19. The Pasadena Refinery is a major source of air many different federally regulated pollutants, including particulate matter, nitrogen oxides, sulfur dioxide, volatile organic compounds, and hazardous air pollutants. The Pasadena Refinery is located in Harris County, Texas, just east of Houston and adjacent to the Galena Park neighborhood.

20. Pasadena filed an application for Title V Permit No. O3711 on May 30, 2014. The Executive Director of the TCEQ issued a draft operating permit ("Pasadena Draft Permit"), notice of which was published on November 12, 2014. According to the public notice, the public comment period for the Pasadena Draft Permit would end 30 days after the date of publication.

21. On December 12, 2014 Plaintiffs submitted timely written comments to the TCEQ during the public comment period. These comments identified specific deficiencies contained in the Pasadena Draft Permit and requested that the TCEQ hold a public hearing on the Pasadena Draft Permit. The TCEQ granted this request and scheduled a public hearing to occur on January 28, 2016. As required by law, the TCEQ also extended the public comment period for the Pasadena Draft Permit until January 28, 2016.

22. On January 28, 2016, Plaintiffs offered oral testimony concerning the Pasadena Draft Permit at the public hearing scheduled by the TCEQ and timely-filed supplementary written comments on the Pasadena Draft Permit.

23. EPA's 45-day review period for the proposed permit ended on September 9, 2016. EPA did not object to the permit.

24. On November 8, 2016, Plaintiffs timely filed with EPA a petition to object to the Pasadena Title V operating permit ("Petition"). 42 U.S.C. § 7661d(b)(2). The Petition was based on objections to the Pasadena Draft Permit that were raised with reasonable specificity during the public comment period, as required by 42 U.S.C. § 7661d(b)(2).

25. Though the Administrator was required to grant or deny the Petition within 60 days, he has not yet done so. 42 U.S.C. § 7661d(b)(2).

26. On February 14, 2017, Plaintiffs sent Acting Administrator Catherine McCabe notice of their intent to sue for her failure to grant or deny the Petition within 60 days.

**CLAIM FOR RELIEF**

**VIOLATION OF 42 U.S.C. § 7661d(b)(2)  
(Failure to Respond to Plaintiffs' Petition)**

27. Plaintiffs re-allege and incorporate the allegations set forth in Paragraphs 1-26.

28. The Clean Air Act required the Administrator to act on the Petition within 60 days of its filing. 42 U.S.C. § 7661d(b)(2) (stating that “[t]he Administrator *shall* grant or deny such a petition within 60 days after the petition is filed.”) (emphasis added). This is a non-discretionary duty.

29. It has been more than 60 days since the Administrator received the Petition. The Administrator’s failure to grant or deny the Petition constitutes a failure to perform an act or duty that is not discretionary. 42 U.S.C. § 7604(a)(2).

**PRAYER FOR RELIEF**

WHEREFORE, based upon the allegations set forth above, Plaintiffs respectfully request that this Court:

A. Declare that the Administrator’s failure to grant or deny the Plaintiffs’ Petition within 60 days constitutes a failure to perform acts or duties that are not discretionary within the meaning of 42 U.S.C. § 7604(a)(2);

B. Order the Administrator to grant or deny the Petition within sixty (60) days;

C. Retain jurisdiction over this action to ensure compliance with the Court’s Order;

D. Award Plaintiffs their costs and fees related to this action; and

E. Grant such other relief as the Court deems just and proper.

Respectfully submitted this 20th day of July, 2017.

/s/ Adam Kron

ADAM KRON (D.C. Bar No. 992135)

Environmental Integrity Project

1000 Vermont Ave. N.W., Suite 1100

Washington, D.C. 20005

(202) 263-4451

(202) 296-8822

akron@environmentalintegrity.org

*Attorney for Plaintiffs*

# **EXHIBIT A**

## **Cover Letter and Petition to Object to Texas Title V Permit No. O3711**



707 Rio Grande Street, Suite 200  
Austin TX, 78701  
p: 512-637-9477 f: 512-584-8019  
[www.environmentalintegrity.org](http://www.environmentalintegrity.org)

November 8, 2016

Administrator Gina McCarthy  
U.S. Environmental Protection Agency  
Ariel Rios Building, Mail Code 1101A  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

*Via E-filing*

**Re: Petition for Objection to Texas Title V Permit No. O3711**

Dear Administrator McCarthy:

Enclosed is a petition requesting that the U.S. Environmental Protection Agency object to the proposed federal Clean Air Act Title V Permit No. O377, issued by the Texas Commission on Environmental Quality, authorizing operation of Pasadena Refining System Inc.'s Pasadena Refinery, located in Harris County, Texas.

This petition is being submitted on behalf of the Environmental Integrity Project, Sierra Club, Texas Environmental Justice Advocacy Services, and Air Alliance Houston. Copies are being provided to the TCEQ, and the permit holder. Service of this Petition on EPA's Region 6 office is accomplished by using EPA's CDX filing system.

Thank you for your attention to this matter.

Sincerely,

Gabriel Clark-Leach  
Environmental Integrity Project  
707 Rio Grande, Suite 200  
Austin, TX 78701  
(512) 637-9478 (phone)  
(512) 584-8019 (fax)  
[gclark-leach@environmentalintegrity.org](mailto:gclark-leach@environmentalintegrity.org)

CC:

U.S. Environmental Protection Agency (EPA)  
Attn: Air Permit Section Chief (6PD-R)  
Region 6  
1445 Ross Avenue, Suite 1200

Dallas, Texas 75202-2733

Texas Commission on Environmental Quality  
Office of Air  
Air Permits Division  
Operational Support Section, MC-163  
P.O. Box 13087  
Austin, Texas 78711-3087

Mr. John Edmunds  
Operations Director  
Pasadena Refining System Inc.  
111 Red Bluff Rd.  
Pasadena, Texas 77506-1530

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
BEFORE THE ADMINISTRATOR**

|                                         |   |                        |
|-----------------------------------------|---|------------------------|
| IN THE MATTER OF                        | § | PETITION FOR OBJECTION |
|                                         | § |                        |
| Clean Air Act Title V Permit (Federal   | § |                        |
| Operating Permit) No. O3711             | § |                        |
|                                         | § |                        |
| Issued to Pasadena Refining System Inc. | § | Permit No. O3711       |
|                                         | § |                        |
|                                         | § |                        |
| Issued by the Texas Commission on       | § |                        |
| Environmental Quality                   | § |                        |
|                                         | § |                        |

**PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO  
ISSUANCE OF PROPOSED TITLE V OPERATING PERMIT NO. O3711 FOR THE  
PASADENA REFINERY**

Pursuant to section 42 U.S.C. § 7661d(b)(2), Environmental Integrity Project, Sierra Club, Texas Environmental Justice Advocacy Services, and Air Alliance Houston (“Petitioners”) hereby petition the Administrator of the U.S. Environmental Protection Agency (“Administrator” or “EPA”) to object to Federal Operating Permit No. O3711 (“Proposed Permit”) issued by the Texas Commission on Environmental Quality (“TCEQ” or “Commission”) for the Pasadena Refinery, operated by Pasadena Refining, Inc.

**I. INTRODUCTION**

The Pasadena Refinery is one of the oldest refineries in the nation and has a history of poor compliance. The refinery routinely exceeds permitted air pollution limits due to old and inefficient units and inadequate pollution control equipment. For example, during the single week preceding the filing deadline for this Petition, unauthorized particulate matter emissions from Pasadena Refining’s FCC Seal Pot exceeded the amount of particulate matter Pasadena Refining is



authorized to emit from that unit over the course of an entire *year*.<sup>1</sup> *See also*, (Exhibit 1) Petitioners' Initial Comments at 3-4 (identifying other serious emission events involving the FCC Seal Pot and other units at the Pasadena Refinery).

The refinery's current owner, Brazil's state-owned oil company Petrobras, failed to timely renew its previous Title V permit for the Pasadena Refinery and recently concluded internal investigations into fraud and bribery charges, which include overbilling, involving their Pasadena Refinery. Taken together with the Refinery's repeated violations of applicable emissions limits, these concerns reflect a poorly controlled facility with a questionable commitment to environmental compliance.

## II. PETITIONERS

Environmental Integrity Project is a non-partisan, nonprofit organization that works to ensure that anti-pollution laws, including the Clean Air Act, are enforced in the public interest without fear or favor. EIP has participated in Title V proceedings in Texas, Maryland, Pennsylvania, Tennessee, Kentucky, Arkansas, and California.

Sierra Club is America's oldest and largest grassroots environmental organization, with over 648,000 members nationwide. Sierra Club's mission is to explore, enjoy, and protect the wild places of the Earth, to practice and promote the responsible use of the Earth's resources and ecosystems, to educate and enlist humanity to protect and restore the quality of the natural and

---

<sup>1</sup> During emission event 246521, which lasted for seven hours on November 3, the FCC Seal Pot emitted 2,028.19 pounds of particulate matter. *See*, <http://www2.tceq.texas.gov/oc/eer/index.cfm?fuseaction=main.getDetails&target=246521> During an unauthorized startup that lasted from November 3 until November 5, the FCC Seal Pot emitted 7,000 pounds of particulate matter. *See*, <http://www2.tceq.texas.gov/oc/eer/index.cfm?fuseaction=main.getDetails&target=246488> The 4.5 tons of particulate matter emitted from the FCC Seal Pot emitted during two events lasting less than a week is almost double the amount of particulate matter this unit is authorized to emit over the course of an entire year. (Exhibit 2) Permit No. 20246 (authorizing the FCC Seal Pot to emit 2.57 tons of particulate matter each year). Emissions of other pollutants from the FCC Seal Pot and pollutants including particulate matter from other units at the Refinery during these two events totaled 13,250.36 pounds.

human environment, and to use all lawful means to carry out those objectives. As part of this mission, the Club has worked for many years to improve implementation of Title V program by filing comments on behalf of its members and petitioning EPA to object to proposed permits for major sources across the United States where those permits fail to protect air quality, public health, and the environment.

Texas Environmental Justice Advocacy Services is an advocacy group whose mission includes educating the public about air pollution issues in Texas, with a strong focus on air pollution created by refineries and petrochemical plants in the Houston Ship Channel. TEJAS promotes environmental protection through education, policy development, community awareness, and legal actions.

Air Alliance Houston is a nonprofit corporation that works to reduce air pollution on behalf of the communities it serves and to protect public health and environmental integrity through research, education, and advocacy.

### **III. PROCEDURAL BACKGROUND**

This Petition addresses the TCEQ's initial issuance of Permit No. O3711. Operation of the Pasadena Refinery had previously been authorized by Permit No. O1544, but Pasadena Refining failed to timely submit a renewal application for this permit and it expired.<sup>2</sup> Pasadena Refining filed its application for Permit No. O3711 on May 30, 2014. English notice of the Draft Permit was published on November 13, 2014. Bilingual notice of the Draft Permit was published on November 22, 2014. Environmental Integrity Project, Air Alliance Houston, Texas Organizing Project, Public Citizen, Environment Texas, and the Sierra Club timely-filed public comments and

---

<sup>2</sup> A copy of the TCEQ's enforcement order addressing Pasadena Refining's failure to timely apply for a renewed federal operating permit is available electronically at:  
[http://www14.tceq.texas.gov/epic/CIO/index.cfm?fuseaction=search.download2&AGY\\_DKT\\_NUM\\_TXT=2014-0763-AIR-E&doc\\_id=739527522014239&doc\\_name=Order%202014-0763-AIR-E.pdf&format\\_cd=pdf](http://www14.tceq.texas.gov/epic/CIO/index.cfm?fuseaction=search.download2&AGY_DKT_NUM_TXT=2014-0763-AIR-E&doc_id=739527522014239&doc_name=Order%202014-0763-AIR-E.pdf&format_cd=pdf)

a hearing request on the Draft Permit on December 12, 2014. On December 9, 2015, the Executive Director approved Commenters' hearing request. Accordingly, the public comment period was extended until January 28, 2016, the date of the public hearing. On January 28, 2016, Environmental Integrity Project filed supplementary comments on the Draft Permit. (Exhibit 3) Supplementary Public Comments.

On July 22, 2016, the TCEQ issued Notice of Proposed Permit and Executive Director's Response to Public Comment. (Exhibit 4) Response to Comments. In response to public comments, the Executive Director removed references to several voided New Source Review ("NSR") permits from the Proposed Permit and added several Permits by Rule ("PBRs") and emission units authorized by PBR to the Proposed Permit's New Source Review Authorizations by Emissions Unit Table. The Executive Director declined to make other changes requested by public commenters.

EPA's 45-day review period ran from July 26, 2016 until September 9, 2016. On September 6, 2016, EPA submitted comments indicating that the Agency could not determine how requirements in various NSR permits, standard permits, and PBRs applied to units at the Pasadena Refinery. (Exhibit 5) EPA Comments. On October 12, 2016, the Executive Director issued Permit No. O3711 and made his response to EPA's comments. (Exhibit 6) Effective Permit Approval and Response to EPA Comments. In his response, the Executive Director maintained that he was not required to revise the Draft Permit to address EPA's concerns, but indicated that Pasadena Refinery was willing to voluntarily comply with some of EPA's requests for clarification but not others.

EPA did not object to the Proposed Permit. (Exhibit 7) Proposed Permit No. O3711; (Exhibit 8) Statement of Basis, Permit No. O3711. Accordingly, members of the public have 60-

days from the end of EPA's review period to petition EPA to object to the Proposed Permit. This Petition is timely filed and requests that the Administrator object to the Proposed Permit based on deficiencies that were raised with reasonable specificity during the public comment period.

#### IV. LEGAL REQUIREMENTS

The Clean Air Act requires each major stationary source of air pollution to apply for and comply with the terms of a federal operating permit issued under Title V of the Act. 42 U.S.C. § 7661a(a). Congress created the Title V permit program to “enable . . . source[s], States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements.” *Operating Permit Program*, 57 Fed. Reg. 32250, 32251 (July 21, 1992). Title V permits accomplish this goal by compiling all the applicable requirements for each major source in a single document. 42 U.S.C. § 7661c(a); *Virginia v. Browner*, 80 F.3d 869, 873 (4th Cir. 1996) (“The permit is crucial to implementation of the Act: it contains, in a single, comprehensive set of documents, all CAA requirements relevant to the particular source.”). Additionally, Title V permits must include monitoring, recordkeeping, and reporting methods that assure ongoing compliance with each requirement and may not restrict the right of regulators or the public to rely on any credible evidence to demonstrate non-compliance with applicable requirements. *Sierra Club v. EPA*, 536 F.3d 673, 674-75 (D.C. Cir. 2008) (“But Title V did more than require the compilation in a single document of existing applicable emission limits . . . . It also mandated that each permit . . . shall set forth monitoring requirements to assure compliance with the permit terms and conditions.”); *In the Matter of Southwestern Electric Power Company* (“Pirkey Order”), Order on Petition No. VI-2014-01 at 13 (February 3, 2016) (“[A] title V permit may not preclude any entity, including the EPA, citizens or the state, from using any credible

evidence to enforce emissions standards, limitations, conditions, or any other provision of a title V permit.”).

Title V permits are the primary method for enforcing and assuring compliance with State Implementation Plan requirements for major sources. 57 Fed. Reg. 32,258. Accordingly, the Administrator must object to or reopen any Title V permit if she determines, at any point, that it fails to comply with Title V requirements. 42 U.S.C. § 7661d(b)(1) (b)(2), and (e); 40 C.F.R. §§ 70.7(f)(1)(iii) and (iv), 70.8(c) and (d). Because federal courts are often unwilling to enforce otherwise applicable requirements that have been omitted from or displaced by conditions in a Title V permit, state-permitting agencies and EPA must ensure that Title V permits accurately and clearly explain what each major source must do to comply with the law. *See, e.g., Sierra Club v. Otter Tail*, 615 F.3d 1008 (8th Cir. 2008 (holding that enforcement of New Source Performance Standard omitted from a source’s Title V permit was barred by 42 U.S.C. § 7607(b)(2))).

If EPA does not object to a proposed permit, “any person may petition the Administrator within 60 days after the expiration of the Administrator’s 45-day review period to make such objection.” 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d); 30 Tex. Admin. Code § 122.360. The Administrator “shall issue an objection . . . if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of the . . . [Clean Air Act].” 42 U.S.C. § 7661d(b)(2); *see also* 40 C.F.R. § 70.8(c)(1). The Administrator must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2).

## V. GROUNDS FOR OBJECTION

### A. The Proposed Permit Fails to Identify and Assure Compliance with Applicable Emission Limits (Incorporation by Reference of “Minor NSR Permits,” PBRs, and Standard Exemptions)

#### 1. Specific Grounds for Objection, Including Citation to Permit Term

The Proposed Permit does not list a single emission limit or operating requirement contained in the 14 Chapter 116 NSR permits,<sup>3</sup> the many different applications for these various permits, or the 39 different PBRs and Standard Exemptions used to authorize the 214 emission units and unit groups listed in the Proposed Permit’s New Source Review Authorization References by Emission Unit table.<sup>4</sup> Instead, the Proposed Permit simply lists the applicable Chapter 116 NSR permits by number and the claimed PBRs and Standard Exemptions by rule number, leaving it to the reader to obtain and sort through all of the relevant permits, permit applications, and current and outdated PBR and Standard Exemption rules to determine which limits and operating requirements are effective and controlling for each unit listed in the Proposed Permit.

Several factors, aside from the sheer amount of information involved, make this task especially difficult. First, multiple permits—including one or more PBRs and Standard

---

<sup>3</sup> A “Chapter 116 NSR permit” is a case-by-case permit issued pursuant to Texas’s federally-approved rules at 30 Texas Administrative Code, Chapter 116.

<sup>4</sup> The Proposed Permit’s list of emission units and groups at the Pasadena Refinery is incomplete. *See*, Response to EPA Comments at Response 1 (“TCEQ does not require the permit applicant to identify emission units where the only applicable requirement is the NSR Authorization; therefore . . . emission units [authorized by permits addressed in EPA’s comment] do not appear in the proposed Title V permit’s New Source Authorization References by Emission Unit Table . . . . Therefore, there are no emission units associated with these NSR permits that are required to be listed in the Title V permit.”). EPA has already rejected this position. *See, In the Matter of Shell Chemical and Shell Oil*, Order on Petition Nos. VI-2014-04 and VI-2014-05 (September 24, 2015) (“Deer Park Order”) at 15 (“The TCEQ should provide a list of emission units for which only general requirements are applicable, and if an emission unit is considered insignificant, it should be identified in the Statement of Basis as such.”).

Exemptions—may establish different and conflicting limits and requirements for a common unit.<sup>5</sup>

Second, one cannot assume that each PBR and Standard Exemption listed in the Proposed Permit has only been claimed once or that the generic limits listed in applicable PBR and Standard Exemption rules apply to each unit authorized by a PBR or Standard Exemption. This is so because Pasadena Refining may have claimed listed PBRs and Standard Exemption to authorize multiple projects at the Pasadena Refinery and, for each project, the applicable emission limits may be divided among several different pieces of equipment involved in the project. Third, applicable requirements established through the permitting process, including requirements that modify existing permit terms, may only appear in application representations.<sup>6</sup>

The Proposed Permit is, as EPA has described other permits issued by the TCEQ, “a tedious maze and not practically enforceable.” *Objection to Title V Permit No. 01420, CITGO Refining and Chemical Company, Corpus Christi Refinery—West Plant* (October 29, 2010) at 3. In the end, even if an interested party is able to obtain current copies of each of the applicable Chapter 116 NSR permits, every application filed for each of those permits, and copies of the applicable PBR and Standard Exemption rules, it will still be impossible to figure out—with reasonable certainty—which emission limits and operating requirements currently apply to each emission unit at the

---

<sup>5</sup> See, e.g., (Exhibit 9) Permit No. 80804, Special Condition No. 11(A) (“Combustion units, with the exception of flares, at this site are exempt from NO<sub>x</sub> and CO operating requirements identified in special conditions in other NSR permits during planned startup and shutdown if the following criteria are satisfied.”)

<sup>6</sup> Representations in permit applications, no less than special conditions listed on a permit’s face, are enforceable conditions of an authorization to construct. 30 Tex. Admin. Code § 116.116(a); see also, Notice of Proposed Permit and Executive Director’s Response to Public Comment, Permit No. 01229, ExxonMobil Baytown Refinery (June 28, 2016) at 2 (“The application representations for [incorporated NSR permits] . . . are enforceable in accordance with 30 TAC § 122.140(3) and are the conditions under which the site is operated.”). The Executive Director’s Response to Comments on Permit No. 01229 is available electronically at: <https://webmail.tceq.state.tx.us/gw/webpub/baeca29a5b6f6cbddb1335c99a59e8cad8c72/GWDOC/DREF/tnrdm3.dms3apo.aopdp95a-new/78587/Official/webacc/GWContentRoot?action=Document.View&merge=fileview&Item.Attachment.type=Document&Item.Attachment.Library.id=tnrdm3.dms3apo.aopdp95a-new&Item.Attachment.Document.id=78587&Item.Attachment.Document.version=Official&Item.Attachment.allowViewNative=1&Item.Attachment.filename=PN%2d5+%2d+O1229+Exxon+Mobil+Corporation+%28Renewal%2c+15118%29&User.context=baeca29a5b6f6cbddb1335c99a59e8cad8c72>

Pasadena Refinery. Because this is so and because federal courts are often unwilling to enforce applicable requirements that are not clearly included in a source's Title V permit, the Administrator must object to the Proposed Permit.

The preconstruction permits incorporated by the Proposed Permit are listed in the New Source Review Authorization References table. Proposed Permit at 253-254. The Proposed Permit's New Source Review Authorization References by Emission Unit table identifies which preconstruction permits apply to many but not all of the emission units at the Refinery. *Id.* at 255-267.

Proposed Permit Special Condition Nos. 23 and 24 incorporate the preconstruction permits listed in the New Source Review Authorization References table.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must include “[e]missions limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance.” 40 C.F.R. § 70.6(a)(1). The terms and conditions of preconstruction permits authorizing emissions from units at the Pasadena Refinery are “applicable requirements.” *Id.* at § 70.2.

As explained below, the Proposed Permit fails to identify how much pollution each unit at the Refinery is authorized to emit under incorporated preconstruction authorizations and fails to provide enough information to allow the reader to determine—with reasonable certainty—what the applicable limits and operating requirements are.

## **3. Inadequacy of the Permit Term**

The Proposed Permit does not directly list any of the operating requirements or emission limits contained in the many different Chapter 116 NSR permits, PBRs, and Standard Exemptions



used to authorize equipment at the Pasadena Refinery. Instead, the Proposed Permit incorporates the applicable permits by reference into the Proposed Permit. Consistent with 42 U.S.C. § 7661c(a) and 40 C.F.R. § 70.6(a), EPA has placed clear and reasonable limits on the proper use of incorporation by reference in Title V permits:

In order for incorporation by reference to be used in a way that fosters public participation and results in a title V permit that assures compliance with the Act, it is important that: (1) referenced documents be specifically identified; (2) descriptive information such as the title or number of the document and the date of the document be included so that there is no ambiguity as to which version of a document is being referenced; and (3) citations, cross references, and incorporations by reference are detailed enough that the manner in which any referenced material applies to a facility is clear and is not reasonably subject to misinterpretation.

*In the Matter of United States Steel—Granite City Works*, Order on Petition No. V-2009-03 (January 31, 2011) (“Granite City I Order”) at 42-43.

The Proposed Permit’s incorporation by reference of Pasadena Refining’s preconstruction permits fails to consistently comply with the three conditions listed in the *Granite City I Order*. Enforceable applications for Chapter 116 NSR permits and certified PBR registrations are not listed by date in the Proposed Permit. The Proposed Permit does not describe which permit limits, operating requirements, and application representations are controlling in cases where apparent conflicts exist. And finally, the Proposed Permit’s method of incorporating the many different preconstruction authorizations claimed by Pasadena Refining, as described below, is opaque and will inevitably give rise to misinterpretation. The Proposed Permit is deficient because it is impossible for the reader to identify, with reasonable certainty, exactly which requirements each unit at the Pasadena Refinery is subject to under applicable preconstruction authorizations it incorporates by reference.

*a. The Proposed Permit's Incorporation by Reference of Chapter 116 NSR Permits Fails to Identify and Assure Compliance with Applicable Requirements*

EPA has made it clear that the TCEQ may not use incorporation by reference to include operating requirements and emission limits from PSD or NNSR (or “Major NSR”) permits in Texas Title V permits:

Because the Texas [Title V] permits use IBR of Major NSR permits so extensively, as a practical matter it is extremely difficult to tell what emission limitations and standards apply to particular emission sources. For members of the public, it can be virtually impossible. This is completely contrary to the goals of the Title V program[.] . . . EPA will continue to object to Title V permits that use IBR for emissions limitations and standards found in Major NSR permits.

Letter to Mark Vickery, Executive Director, TCEQ from Al Armendariz, Regional Administrator, EPA Region 6 (June 10, 2010).<sup>7</sup>

The Proposed Permit's incorporation by reference of Pasadena Refining's preconstruction permits is objectionable for the same reasons. The Pasadena Refinery is a Title I major stationary source of air pollution. The preconstruction permits incorporated by reference into the Proposed Permit authorize emissions more than 20 times higher than the 100 tons per year major source threshold.<sup>8</sup> Indeed, Pasadena Refining's preconstruction permits authorize emissions that are much higher than emissions authorized by specific “Major NSR permits” that EPA held could not be incorporated by reference into a Texas Title V permit. Supplementary Comments at 23. Projects at the Pasadena Refinery are also subject to PSD and NNSR requirements. *See, e.g.* 40 C.F.R. § 51.166(a)(7)(i) (“The requirements of this section apply to . . . any project at an existing major stationary source[.]”).

---

<sup>7</sup> Available electronically at:

[https://www.tceq.texas.gov/assets/public/permitting/air/Announcements/from\\_epa\\_6\\_10\\_10.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Announcements/from_epa_6_10_10.pdf)

<sup>8</sup> Emissions authorized by nine of Pasadena Refining's 14 NSR permits total 4,340 tons per year, including 1,269 tons of NO<sub>x</sub>, 797 tons of VOC, 985 tons of SO<sub>2</sub>, 1,037 tons of CO, and 252 tons of PM. *See* Supplementary Comments at 23, n8.

Nonetheless, the TCEQ claims that the Proposed Permit's incorporation by reference of Pasadena Refining's Chapter 116 NSR permits is acceptable, because all of the NSR permits are "Minor NSR permits." This argument must fail because there is no material distinction between the PSD and NNSR permits EPA has held may not be incorporated by reference into Texas Title V permits and the so-called "Minor NSR permits" incorporated by reference into the Proposed Permit. The term "Minor NSR permit" is not actually defined in Texas's regulations and bears no relationship to the amount of pollution a permit authorizes. Instead, the TCEQ refers to Pasadena Refining's preconstruction authorizations as "minor" because the Refinery was constructed before the PSD and NNSR permitting programs were enacted. That the Pasadena Refinery is grandfathered from PSD and NNSR preconstruction permitting requirements is not a reasonable basis on which to hold that the terms of Pasadena Refining's Chapter 116 NSR permits, which authorize significant emissions from the Refinery's old and poorly maintained units, should not be listed on the face of the Proposed Permit.

Indeed, the Proposed Permit's incorporation by reference of Pasadena Refining's so-called "Minor NSR permits" is an even greater burden on the enforceability of emission limits for significant emission units at the Pasadena Refinery than the incorporation by reference of Major NSR permits that has drawn the Administrator's objection in the past. While most of the Title V permits that drew an EPA objection for incorporating Major NSR permit requirements by reference only incorporated one or two Major NSR permits, emission limits and operating requirements authorized by Pasadena Refining's NSR permits are spread across 14 different Chapter 116 permits. If incorporation by reference of one or two Major NSR permits made it "virtually impossible" for members of the public to identify applicable requirements, then incorporation by reference of emission limits and operating requirements spread across Pasadena Refining's 14

different Chapter 116 NSR permits guarantees that members of the public and other non-specialists will be unable to identify operating requirements and emission limits that apply to each unit at the Refinery with reasonable certainty.

In order to identify applicable emission limits and operating requirements established by Pasadena Refining's Chapter 116 NSR permits, the reader must identify and obtain copies of each of the 14 permits incorporated by reference into the Proposed Permit. The reader will also need to obtain copies of each of the applications and application files for each revision and amendment made to each of these permits. This is so because representations made in permit applications, no less than special conditions listed on a permit's face, are enforceable conditions of a Texas NSR permit. 30 Tex. Admin. Code § 116.116(a). Once a reader obtains copies of every relevant permit document, she must then work through all of these documents and reconcile the various and potentially conflicting requirements contained in each of the documents that apply to common units. This is necessary, because requirements for emission units authorized by one permit may be revised by a different permit. Indeed, in many cases, revisions to permit requirements may not be reflected on the face of any permit and will only be apparent in representations included in underlying permit applications. In such cases, the reader will also need to consult the TCEQ's project documents to determine which representations revising previously established requirements were actually approved by the Agency.

The Proposed Permit is a case-study in exactly the kind of convoluted regulatory practices resulting in unenforceable requirements that Title V was created to resolve. EPA has made it clear that Texas's practice of incorporating NSR permits by reference is only acceptable if "referenced permits are part of the public docket or otherwise readily available, and currently applicable, and that the title V permit is **clear and unambiguous as to how the emissions limits apply to**

**particular emission limits.”** Letter to Mark Vickery, Executive Director, TCEQ from Al Armendariz, Regional Administrator, EPA Region 6 (June 10, 2010) (emphasis in original). The Proposed Permit’s incorporation by reference of Pasadena Refining’s NSR permits is contrary to Title V because it is not clear and unambiguous about how incorporated requirements apply to each unit, because enforceable application representations are not readily available, and because the task of obtaining all the relevant records and compiling and reconciling requirements spread across these records to determine which requirements apply to each emission unit at the Pasadena Refinery places an unreasonable and unmanageable burden on stakeholders attempting to identify and enforce applicable requirements. *Granite City I Order* at 42-43.

*b. The Proposed Permit’s Incorporation by Reference of PBRs and Standard Exemptions Fails to Identify and Assure Compliance with Applicable Requirements*

The Proposed Permit is deficient because it fails to include information necessary for readers to answer the following basic questions about how emission limits and operating requirements contained in PBRs and Standard Exemptions claimed by Pasadena Refining:

- How much pollution is Pasadena Refining authorized to emit from each unit under claimed PBRs and Standard Exemptions?
- Which pollutants may Pasadena Refining emit from each unit under claimed PBRs and Standard Exemptions?
- Which emission units at the Refinery are subject to limits in the claimed PBRs and Standard Exemptions?

Until the TCEQ revises the Proposed Permit to include information necessary to answer these basic questions, applicable requirements in PBRs and Standard Exemptions claimed by Pasadena Refining will remain unenforceable.

(i) *The Proposed Permit Fails and Permit Record Fails to Provide Enough Information For a Reader to Determine How Much Each Unit Authorized by PBR or Standard Exemption is Authorized to Emit*

Before any actual work is begun on a new or modified facility, an operator must obtain a permit or permit amendment authorizing the project. 30 Tex. Admin. Code § 116.110(a). To authorize construction of new or modified facilities, an operator may apply for a new or amended Chapter 116 case-by-case permit. *Id.* at §§ 116.110 and 116.111. In lieu of applying for a new or amended case-by-case permit under § 116.111, an operator may instead claim a PBR (or PBRs) to authorize construction of modification of a facility, so long as the proposed construction project complies with PBR requirements. *See, e.g.*, 30 Tex. Admin. Code §§ 106.4 (stating that construction may be authorized by PBR) and 116.116(d) (stating that a PBR may be used in lieu of a permit amendment to authorize construction).<sup>9</sup> While each Chapter 116 NSR permit is assigned a unique permit number and includes source-specific emission limits and special conditions based on the Executive Director’s review of the operator’s application, PBRs and Standard Exemptions establish generic emission limits and operating requirements that apply to all new and modified facilities authorized by PBR or Standard Exemption (unless the operator registers PBR emissions at lower rates—*see, id.* at § 106.6). These generic requirements are found in Texas’s PBR rules. When construction of a new or modified emission unit authorized by PBR, the PBR or PBRs claimed by the operator—*i.e., the rule itself*—is the permit authorizing the project. *See, e.g., id.* at § 106.261 (“[F]acilities, or physical or operational changes to a facility, are permitted by rule provided that all of the following conditions of this section are satisfied.”).

---

<sup>9</sup> The TCEQ’s Chapter 106 PBR rules replaced and are substantially similar to Texas’s previous practice of issuing Standard Exemptions.

Thus, while the Proposed Permit identifies incorporated Chapter 116 NSR permits by listing their unique permit numbers and the dates on which they were issued, the Proposed Permit identifies applicable PBRs and Standard Exemptions by *rule* number and the date that each rule was promulgated (not the date(s) the PBR or Standard Exemption was claimed to authorize construction at the Pasadena Refinery). Proposed Permit at 253-254. This way of listing applicable requirements is misleading, because it suggests that each claimed PBR, like the Chapter 116 NSR permits identified in the Proposed Permit, is a single authorization. This suggestion is misleading because Pasadena Refining has claimed some PBRs and Standard Exemptions multiple times to authorize multiple projects involving one or more emission units at the Pasadena Refinery.

Each PBR submission may involve one or more claimed PBRs that establish limits that apply to a single emission unit or to multiple emission units. Additionally, Pasadena Refining may claim the same PBR in different submissions to authorize multiple modifications to different emission units. Unless the Proposed Permit provides information identifying each emission unit covered by each claimed PBR (or Standard Exemption) *for each submission*, it is impossible to tell how much each emission unit is authorized to emit under PBRs and Standard Exemptions claimed by Pasadena Refining.

For example, the Proposed Permit's New Source Review Authorization References by Emission Unit table indicates that Pasadena Refining has claimed the PBR at § 106.261 (9/4/2000) to authorize emissions from 15 different emission units or unit groups: ALKHT001 (#1 Alky Heater), ALKHT002 (#2 Alky Heater), DOKLO001 (Barge Loading), HTREF002 (Reformer #2 Hydrotreater Stripper Heater Stack), LSGHT001 (Heater H-3701), TKFTK118 (Tank 118), TKFTK307 (Tank 307), TKFTK330 (Tank 330), TKFTK331 (Tank 331), TKFTK815 (Tank 815), TKFTK820 (Tank 820), TKFTK830 (Tank 830), TKFTK831 (Tank 831), TVFUG-ALL (Refinery

Fugitive Equipment), and TVFUG-GGA (Fugitive). Proposed Permit at 255-267. This PBR does not include any emission limits for federally regulated pollutants, so the emission limits at 30 Tex. Admin. Code § 106.4(a)(1) apply. However, one cannot tell, based on information contained in the Proposed Permit and the incorporated PBR, whether changes to or construction of each of the 15 emission units were authorized as part of the same submission or as different projects. This matters, because if construction or modification of each unit was separately authorized—*i.e.*, meaning the PBR has been claimed 15 times—*each* unit may emit up to the 30 Tex. Admin. Code § 106.4(a)(1) limits, while the units' *combined emissions* must remain below those same limits if construction of or modifications to all of those units was authorized as part of the same submission/project. The difference between these two scenarios is huge: If all the construction of or changes to all of these units was authorized as part of the same submission, then their combined VOC emissions must remain below 25 tons per year. 30 Tex. Admin. Code § 106.4(a)(1)(A). If each unit was individually authorized, then the combined VOC emissions from the units allowed under § 106.4 would be 375 tons per year (25 tons per year \* 15 emission units). *Id.* Because the Proposed Permit is ambiguous as to whether these units are authorized to emit 25 tons per year of VOC, 375 tons per year of VOC, or some other amount, it fails to specify and assure compliance with applicable emission limits. The Proposed Permit is deficient for the same reason with respect to each pollutant each emission unit is authorized to emit under § 106.261 (9/4/2000) PBR.

This same problem also applies to the following PBRs and Standard Exemptions incorporated by reference into the Proposed Permit to authorize multiple emission units:



| <b>PBR/Standard Exemption Rule</b> | <b>Date PBR/Standard Exemption Promulgated</b> | <b>Emission Units or Unit Groups</b>                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 106.262                            | 11/1/2003                                      | HTREF002 (Reformer #2 Hydrotreater Stripper Heater Stack), LSGHT001 (Heater H-3701), TVFUG-ALL (Refinery Fugitive Equipment), TVFUG-GGA (Fugitive)                                                                                                                                                                                                                                                    |
| 106.371                            | 9/4/2000                                       | COOLINGTWR (Cooling Water Units), ENGCT1 (Engineering Building AC Cooling Tower)                                                                                                                                                                                                                                                                                                                      |
| 106.472                            | 3/14/1997                                      | DOKLO001 (Barge Loading), HSSUMP (Hydroblant Slab Sump), TKFTK027B (Caustic Tank #27B), TKFTK036 (Tank #36), TKFTK049 (Caustic Tank #49), TKFTK205 (Tank 205), TKFTK321 (Fresh Caustic Tank 321), TKFTK330 (Tank 330), TKFTK535 (KOH Tank 535), TKFTKD-8 (Spent KOH Tank D-8), TKFTKD-9 (Spent KOH Tank D-9), TKFTKGDISL (Diesel Tanks), TKFTKGLUBE (Lube Oil Tanks), TKFTKNAL1 (Nalco Tanks Group 1) |
| 106.476                            | 3/14/1997                                      | TKFTK901, TKFTK902, TKFTK903, TKFTK904, TKFTK905, TKFTK906, TKFTK907, TKFTK908, TKFTK909, TKFTK910, TKFTK911, TKFTK912, TKFTK920, TKFTK921, TKFTK922, TKFTK950, TKFTK951, TKFTK952, TKFTK953, TKFTK954, TKFTK955, TKFTK956                                                                                                                                                                            |
| 106.478                            | 3/14/1997                                      | TKFTK244 (Condensate Tank), TKFTKNAL2 (Nalco Tanks Group 2)                                                                                                                                                                                                                                                                                                                                           |
| 106.478                            | 9/4/2000                                       | TKFTK250 (Tank 250), TKFTK807 (Tank 807), TKFTK808 (Tank 808), TKFTK810 (Tank 810), TKFTK811 (Tank 811), TKFTK812 (Tank 812), TKFTK815 (Tank 815), TKFTK818 (Tank 818), TKFTK822 (Tank 822), WESTDSLTK1 (West Diesel Tank 1), WESTDSLTK2 (West Diesel Tank 2)                                                                                                                                         |
| 106.511                            | 9/4/2000                                       | EMGEN001 (Emergency Diesel Generator-DCS), EMGEN002 (Emergency Gasoline Generator-Main Office), EMWEN001 (Emergency Diesel Firewater Pump #1), EMWEN002 (Emergency Diesel Firewater Pump #2), EMWEN0003 (Emergency Diesel Firewater Pump #3), FWPUMP (Firewater Pump Engine - 380 HP), LITTLEBLUE (Little Blue Engine (less than 150 HP))                                                             |
| 106.532                            | 3/14/1997                                      | CKRSUMP (Coker Unit Sump), FEWWS (Water and Wastewater Treatment)                                                                                                                                                                                                                                                                                                                                     |
| S.E. 7                             | 8/30/1988                                      | CKRHT001 (Coker Heater #2), CKRHT002 (Coker Heater #2), HTCKR002 (Coker Heater #2 Stack)                                                                                                                                                                                                                                                                                                              |
| S.E. 51                            | 11/5/1986                                      | CAUSUNLOAD (AMI-PUR Unit Caustic Unloading), REFUNLOAD (Ref. Area Unloading), SRU-UNLOAD (MDEA Unloading)                                                                                                                                                                                                                                                                                             |

|          |          |                                                                                                  |
|----------|----------|--------------------------------------------------------------------------------------------------|
| S.E. 107 | 6/7/1996 | DEGREASE1 (Degreaser #1), DEGREASE2 (Warehouse Degreaser #1), DEGREASE3 (Warehouse Degreaser #2) |
|----------|----------|--------------------------------------------------------------------------------------------------|

- (ii) *The Proposed Permit Fails and Permit Record Fails to Provide Enough Information For a Reader to Determine which Pollutants Pasadena Refining is Authorized to Emit Under Claimed PBRs and Standard Exemptions*

Texas's General PBR requirements rule at § 106.4 indicates that a PBR may be used to authorize emission of *any* contaminant other than water, nitrogen, ethane, hydrogen, oxygen, and greenhouse gases. 30 Tex. Admin. Code § 106.4(a)(1)(E).<sup>10</sup> However, claiming a PBR for a project cannot automatically authorize the emission of *all* pollutants up to the limits identified in § 106.4 (*i.e.*, 250 TPY NO<sub>x</sub> + 250 TPY CO + 25 TPY VOC + 25 TPY SO<sub>2</sub> + 25 TPY PM + 25 TPY Lead + 25 TPY H<sub>2</sub>S + 25 TPY H<sub>2</sub>SO<sub>4</sub>). If PBRs worked that way, *each* claimed PBR would authorize allowable emission increases exceeding applicable major source and major modification thresholds, in most cases, without any prior authorization or public participation. It would completely undermine the integrity of Texas's PSD and NNSR programs. Such a program would also improperly allow Pasadena Refining to construct emission units with the potential to emit NSR pollutants at levels that could significantly deteriorate existing air quality and contribute to violations of health-based ambient air quality standards without prior approval by the TCEQ. 42 U.S.C. § 7410(a)(2)(D) (providing that State Implementation Plans must contain provisions to prohibit construction of sources that will cause or contribute to the violation of ambient air quality standards or PSD requirements).

Fortunately, Texas does not seem to read its rules provide that each project authorized by PBR is authorized to emit all contaminants up to the thresholds contained in § 106.4(a)(1). Instead,

---

<sup>10</sup> The term "contaminant," as defined by the Texas Clean Air Act encompasses all federally-regulated NSR pollutants. Tex. Health & Safety Code § 382.003(2).

(1) only emissions related to the particular construction project for which a PBR is claimed are authorized, *see, e.g.*, 30 Tex. Admin. Code § 106.4(a) (stating that emissions from a facility authorized by PBR must remain below the § 106.4(a)(1) limits, “*as applicable*”) (emphasis added) and (2) cumulative authorized emissions for each PBR project must remain below major modification thresholds. (Exhibit 10) PBR Checklist, Section 1. The Proposed Permit, however, undermines the enforceability of these necessary restrictions because it does not contain any information about the projects and emissions authorized by PBR (or Standard Exemption) for any emission unit at the Pasadena Refinery. Instead, the Proposed Permit only lists claimed PBRs and Standard Exemptions by rule number and identifies emissions units subject to requirements in some, but not all, of the claimed PBRs and Standard Exemptions. Because the incorporated rules do not identify which of the many different pollutants each claimed PBR *may* be used to authorize each unit at the Pasadena Refinery is *actually authorized to emit*, the Proposed Permit must provide this information: It must explain how the incorporated PBRs and Standard Exemptions apply to emission units at the Pasadena Refinery. Because the Proposed Permit omits this information, it is incomplete and fails to assure compliance with applicable requirements. *Granite City I Order* at 42-43.

As the Proposed Permit is currently written, the only limits that clearly apply to emission units authorized by PBR are those listed at 30 Tex. Admin. Code § 106.4 and the claimed PBRs. These limits are not stringent enough to assure compliance with PSD and NNSR requirements and to prevent construction of projects that violate applicable air quality standards. Because the Proposed Permit incorrectly suggests that all pollutants that *may* be authorized by a PBR are in fact authorized by each PBR Pasadena Refining has claimed, it fails to assure compliance with applicable requirements.

(iii) *The Proposed Permit Fails to Identify any Emission Units Authorized by Twelve PBRs and Standard Exemptions Claimed by Pasadena Refining*

While the Proposed Permit incorporates the following PBRs and Standard Exemptions, it does not identify *any* emission unit or group of units subject to requirements in the claimed rules: 106.261 (3/14/1997), 106.261 (9/4/2000), 106.262 (3/14/1997), 106.475 (9/4/2000), 14 (6/7/1996), 86 (8/30/1988), 100 (6/7/1996), 106 (9/13/1993), 111 (1/8/1980), 111 (9/12/1989), and 261 (12/24/1988). Proposed Permit 253-267. Because the Proposed Permit fails to identify the emission units authorized by and subject to the requirements in these claimed rules, it is completely opaque as to how the PBRs and Standard Exemptions apply to emission units at the Pasadena Refinery and thereby undermines the enforceability of PBR and Standard Exemption requirements. *Objection to Title V Permit No. O2164, Chevron Phillips Chemical Company, Philtex Plant* (August 6, 2010) at ¶ 7 (draft permit fails to meet 40 C.F.R. § 70.6(a)(1) and (3) because it does not list any emission units authorized under specified PBRs); *Deer Park Order* at 11-15. Moreover, even if an interested party is able to determine which emission units *should* be subject to one or more of these PBRs and Standard Exemptions, a court is unlikely to enforce these requirements, because the Proposed Permit fails to identify them as applicable for any specific emission unit or units at the Pasadena Refinery. *See, United States v. EME Homer City Generation*, 727 F.3d 274, 300 (3d Cir. 2013) (explaining that court lacks jurisdiction to enforce requirements improperly omitted from a Title V permit). Because this is so, the Proposed Permit fails to identify and assure compliance with all applicable requirements. 42 U.S.C. § 7661c(a).

*c. The Proposed Permit's Incorporation by Reference of So-Called Minor NSR Permits and PBRs that Apply to the Same Emission Unit Makes it Impossible to Determine the Emission Limits that Apply to Such Units*

According to the Proposed Permit, Pasadena Refining has used a Chapter 116 NSR permit or permits *and* a PBR or Standard Exemption to authorize projects at and emissions from the following units:

| Unit/Unit Group | Description                                             | NSR Permits and PBRs                                                                         |
|-----------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------|
| ALKHT001        | #1 Alky Heater                                          | 56389, 106.261 (11/01/2003)                                                                  |
| ALKHT002        | #2 Alky Heater                                          | 56389, 106.261 (11/01/2003)                                                                  |
| DOKLO001        | Barge Loading                                           | 26891, 106.261 (11/01/2003), 106.472 (09/04/2000)                                            |
| HTREF002        | Reformer #2<br>Hydrotreater<br>Stripper Heater<br>Stack | 56389, 106.261 (11/01/2003), 106.262 (11/01/2003)                                            |
| LSGHT001        | Heater H-3701                                           | 76192, 106.261 (11/01/2003), 106.262 (11/01/2003)                                            |
| REFHT201        | Reformate Splitter<br>Heater (Former<br>Isom)           | 26891, 106.264 (09/04/2000)                                                                  |
| TKFTK118        | Tank 118                                                | 56389, 106.261 (11/01/2003)                                                                  |
| TKFTK205        | Tank 205                                                | 56389, 106.472 (09/04/2000)                                                                  |
| TKFTK307        | Tank 307                                                | 20246, 106.261 (11/01/2003)                                                                  |
| TKFTK331        | Tank 331                                                | 56389, 106.261 (11/01/2003)                                                                  |
| TKFTK807        | Tank 807                                                | 56389, 106.478 (09/04/2000)                                                                  |
| TKFTK808        | Tank 808                                                | 20246, 106.478 (09/04/2000)                                                                  |
| TKFTK810        | Tank 810                                                | 20246, 106.478 (09/04/2000)                                                                  |
| TKFTK811        | Tank 811                                                | 20246, 106.478 (09/04/2000)                                                                  |
| TKFTK812        | Tank 812                                                | 56389, 106.478 (09/04/2000)                                                                  |
| TKFTK815        | Tank 815                                                | 56389, 106.261 (11/01/2003)                                                                  |
| TKFTK818        | Tank 818                                                | 20246, 106.478 (09/04/2000)                                                                  |
| TKFTK820        | Tank 820                                                | 20246, 106.261 (11/01/2003)                                                                  |
| TKFTK822        | Tank 822                                                | 56389, 106.478 (09/04/2000)                                                                  |
| TKFTK830        | Tank 830                                                | 56389, 106.261 (11/01/2003)                                                                  |
| TKFTK831        | Tank 831                                                | 56389, 106.261 (11/01/2003)                                                                  |
| TVFUG-ALL       | Refinery Fugitive<br>Equipment                          | 20246, 22039, 26891, 3776, 56389, 5953, 76192,<br>106.261 (11/01/2003), 106.262 (11/01/2003) |
| TVFUG-GGA       | Fugitive                                                | 20246, 56389, 5953, 106.261 (11/01/2003), 106.262<br>(11/01/2003)                            |

Proposed Permit at 253-267.

While the Special Conditions and MAERTs in the applicable Chapter 116 NSR permits and representations in the many different applications for each permit may list operating requirements and operating limits for these units, there is no way to determine whether these requirements are controlling. This is so because the TCEQ's Chapter 116 rules provide that PBRs may be used in lieu of a permit amendment or alteration to authorize changes to a facility. 30 Tex. Admin. Code § 116.116(d). Because there is no way, based on the text of the applicable PBRs, to determine exactly how they have been applied to units at the Pasadena Refinery, one cannot determine based on information included in the Proposed Permit and the permit record for this project, which operating requirements and emission limits in the above-listed Chapter 116 NSR permits remain controlling for the above-listed units and which have been revised by a PBR. Because this is so, the Proposed Permit fails to include information required to understand how applicable requirements, including Chapter 116 NSR permits and PBRs apply to emission units at the Pasadena Refinery. Accordingly, the Proposed Permit fails to comply with Title V. 42 U.S.C. § 7661c(a); 40 C.F.R. § 70.6(a).

#### 4. Issues Raised in Public Comments

| Issue                                                                                                                                        | Citation                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| The Proposed Permit fails to identify applicable requirements in Pasadena Refining's preconstruction permit applications                     | Petitioners' Initial Comments at 2-3                                                                     |
|                                                                                                                                              | Supplementary Comments at 8                                                                              |
| The Proposed Permit fails to identify and assure compliance with NSR emission limits and operating requirements it incorporates by reference | Petitioners' Initial Comments at 2, 5-8 (Chapter 116 NSR Permits), 8-10 (PBRs)                           |
|                                                                                                                                              | Supplementary Comments at 20-28 (Chapter 116 NSR Permits and PBRs), 28-35 (PBRs and Standard Exemptions) |

## **5. Analysis of State's Response**

Petitioners' Initial and Supplementary Comments explain in great detail why the Proposed Permit's incorporation by reference of Pasadena Refining's preconstruction permits fails to assure compliance with applicable requirements. These comments (1) identify the specific kinds of information omitted from the Proposed Permit that makes it impossible or nearly impossible to identify applicable emission limits and operating requirements for each unit and (2) asked the Executive Director to explain where—in the permit record—such information could be found.<sup>11</sup> The Executive Director failed to address the substance of Petitioners' specific comments, relying instead on the argument that the Proposed Permit's incorporation by reference of so-called "Minor NSR permits," PBRs, and Standard Exemptions was approved by EPA. Response to Comments at 10, 14, 17, and 23.

Petitioners anticipated and rebutted this unsatisfactory response. Supplementary Comments at 21-28. Even if EPA has declined to object to the TCEQ's practice of incorporating NSR permit requirements into Texas Title V permits in the past, the Administrator must object to the Proposed Permit because it fails to conform to EPA's reasonable conditions on the use of IBR and because it fails to assure compliance with emission limits and operating requirements in Pasadena Refining's many different preconstruction permits.

### **B. The Proposed Permit Fails to Require Monitoring, Recordkeeping, and Reporting Requirements that Assure Compliance with Applicable Limits (PBRs and Standard Exemptions)**

#### **1. Specific Grounds for Objection, Including Citation to Permit Term**

Each Title V permit issued by the TCEQ must specify monitoring methods that assure compliance with each applicable requirement. 42 U.S.C. §§ 7661c(a) and (c). Emission limits

---

<sup>11</sup> See, Initial Comments at 2; Supplementary Comments at 31-32.

and operating conditions established by PBRs and Standard Exemptions incorporated by reference into the Proposed Permit are “applicable requirements.” 30 Tex. Admin. Code § 122.10(2)(H); 40 C.F.R. § 70.2. The Proposed Permit is deficient because it fails to specify monitoring methods that assure compliance with applicable PBR and Standard Exemption requirements.

Special Condition No. 23 of the Proposed Permit provides that PBRs and Standard Exemptions listed in the Proposed Permit’s New Source Review Authorization References attachment are incorporated by reference as applicable requirements.

Special Condition No. 24 of the Proposed Permit requires Pasadena Refining to comply with “the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.” The TCEQ’s 30 Texas Administrative Code, Chapter 106, Subchapter A rules establish general requirements for all PBRs.

Special Condition No. 25 establishes a non-exhaustive list of monitoring and recordkeeping methods that Pasadena may use to demonstrate compliance with applicable PBR and Standard Exemption requirements. Because the list of monitoring methods is non-exhaustive, Pasadena Refining may also choose unlisted methods to determine and demonstrate compliance with applicable PBRs and Standard Exemptions.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring, recordkeeping, and reporting conditions that assure compliance with all applicable requirements. 42 U.S.C. §§ 7661c(a) and (c); 40 C.F.R. § 70.6(a)(3) and (c)(1); *In the Matter of Wheelabrator Baltimore, L.P.*, Permit No. 24-510-01886 (April 14, 2010) at 10. As explained below, the Proposed Permit is deficient because it fails to specify monitoring methods that assure compliance with applicable PBR and Standard Exemption requirements.



### 3. Inadequacy of the Permit Term

Emission units at the Pasadena Refinery authorized by PBRs and Standard Exemptions must comply with general PBR requirements listed at 30 Tex. Admin. Code § 106.4, the general Standard Exemption requirements in effect at the time each exemption was claimed, as well as any requirements listed in the specific PBRs and Standard Exemptions Pasadena Refining has claimed. Proposed Permit, Special Condition Nos. 23 and 24.

As described in Section A of this Petition, the Proposed Permit is deficient because it fails to identify, with reasonable specificity, which PBR and Standard Exemption emission limits and operating requirements apply to each unit at the Refinery. The Proposed is also deficient because it fails to specify monitoring methods that assure compliance with each such limit and operating requirement. Instead, the Proposed Permit outsources the TCEQ's obligation to specify minimum monitoring requirements that assure compliance with applicable limits and operating conditions to Pasadena Refining:

The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, material safety data sheets (MSDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144.

- A. If applicable, monitoring of control device performance or general work practice standards shall be made in accordance with the TCEQ Periodic Monitoring Guidance document.
- B. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as

a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

Proposed Permit, Special Condition No. 25.

Pasadena Refining is not required to use records relating to any of the methods listed in Special Condition No. 25 to demonstrate compliance with any particular applicable PBR and Standard Exemption emission limit or operating requirement. Instead, the Special Condition leaves it to Pasadena Refining's discretion to determine which monitoring methods should be used to demonstrate compliance with each PBR and Standard Exemption emission limit and operating requirement without providing any process for the TCEQ, the public, or EPA to evaluate whether the Company's determination that a particular method yields data representative of compliance with applicable requirements is reasonable.

This outsourcing renders the Proposed Permit deficient for three reasons: First, the Proposed Permit is deficient because it fails to specify monitoring that assures compliance with each applicable requirement. It is not enough for the permit to require Pasadena to use reliable monitoring; instead, the purpose of the permit is to identify and mandate specific monitoring methods that assure compliance with applicable requirements. *In the Matter of Yuhuang Chemical Inc.*, Order on Petition No. VI-2015-03 (August 31, 2016) at 14. ("In order for an emission limit to be enforceable as a practical matter, the permit must clearly specify how emissions will be measured or determined for purposes of demonstrating compliance with the limit."). Second, the Proposed Permit is deficient because the permitting record does not explain how the Proposed Permit assures compliance with applicable PBR and Standard Exemption requirements. *In the Matter of Mettiki Coal*, Order on Petition No. III-2013-1 (September 26, 2014) at 7-8 ("In addition to including permit terms sufficient to satisfy EPA's part 70 monitoring requirements, permitting authorities must include a rationale for the monitoring requirements selected that is clear and

documented in the permit record.”). Third, the Proposed Permit is deficient because the Executive Director’s failure to specify monitoring methods for applicable PBR and Standard Exemption requirements has prevented the public from evaluating whether Title V monitoring requirements have been met. *In the Matter of United States Steel—Granite City Works*, Order on Petition No. V-2011-2 (December 3, 2012) at 9-12 (granting petition for objection because the “permit fails to specify the monitoring methodology and also fails to provide a mechanism for review of the methodology by IEPA, the public, and EPA after the permit is issued.”).

#### **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 2-4.

#### **5. Analysis of State’s Response**

The Executive Director makes two arguments in response to Petitioners’ demonstration that the Proposed Permit fails to require specific monitoring methods that assure compliance with each PBR and Standard Exemption emission limitation and operating requirement. First, the Executive Director contends that the Proposed Permit contains adequate monitoring to provide an assurance of compliance with applicable requirements. Response to Comments at 22. As support for this contention, the Executive Director references his unsupported assertion in response to a different comment that “[t]he ED has determined that the monitoring required by the terms and conditions of the draft permit, including periodic monitoring and Compliance Assurance Monitoring in the Additional Monitoring Summary attachment, is sufficient for PRSI to demonstrate compliance for the applicable state and federal requirements.” *Id.* at 19. As part of the referenced response, however, the Executive Director makes it clear that he does not review the sufficiency of monitoring included in NSR permits issued under the provisions of 30 Tex.

Admin. Code, Chapter 116. *Id.* at 20. Second, the Executive Director contends that the Proposed Permit does not need to specify monitoring methods that assure compliance with PBR and Standard Exemption emission limits and operating requirements:

The ED disagrees that specific monitoring has to be included for every PBR (including Standard Exemptions) held at the site. As stated in Special Terms and Condition 25, PRSI is required to keep records that include, but are not limited to, production capacity and throughput, hours of operation, material safety data sheets (MSDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), and control device parametric monitoring. PRSI is required to keep these records for demonstrating compliance in the annual permit compliance certification report for the FOP.

Response to Comments at 23.

The Executive Director's response does not rebut Petitioners' demonstration that the Proposed Permit is deficient because it fails to specify which monitoring methods assure compliance with each applicable PBR and Standard Exemption emission limit and operating requirement. The Executive Director's contention that the Proposed Permit includes monitoring conditions that assure compliance with all applicable requirements is unsupported, because neither the Proposed Permit nor the Statement of Basis identify (1) applicable PBR and Standard Exemption emission limits on a unit-by-unit basis<sup>12</sup> or (2) mandatory monitoring methods that assure compliance with each such limit. While Proposed Permit, Special Condition No. 25 includes a laundry list of records that Pasadena Refining might use to determine compliance with applicable limits, the Proposed Permit does not require Pasadena Refining to use records related

---

<sup>12</sup> This information is not included in the claimed PBRs and Standard Exemptions. Though each Chapter 106 PBR is subject to limits at 106.4 and listed in the specific claimed PBR, additional information is needed about the specific projects authorized by PBR to determine how these limits apply. For example, if changes related to a particular project involving multiple pieces of equipment are authorized by a single PBR, cumulative emission increases resulting from the project may not exceed the applicable limits. Thus, the allowable increases from each affected unit may be less than the limit(s) listed in the applicable rule.

to any particular monitoring method(s), listed or unlisted, to determine and demonstrate compliance with applicable PBR and Standard Exemption emission limits. Because the Proposed Permit fails to identify the applicable limits or explain the kind of monitoring Pasadena Refining must undertake to assure compliance with each such limit, the Proposed Permit is deficient.

The Executive Director's contention that he is not required to specify monitoring that assure compliance with each applicable PBR and Standard Exemption emission limit is incorrect. The TCEQ "does not have the discretion to issue a permit without specifying the monitoring methodology needed to assure compliance with applicable requirements in the title V permit." *Wheelabrator Order* at 10 (citing 42 U.S.C. § 7661c(c)).

**C. The Proposed Permit Fails to Establish Monitoring, Recordkeeping, and Reporting Requirements that Assure Compliance with Emission Limits for Pasadena Refining's CO Boiler and FCC Charge Heater**

**1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit is deficient because it fails to establish any monitoring requirements that assure compliance with the following emission limits for combustion units at the Pasadena Refinery authorized by Permit No. 20246:<sup>13</sup>

| Unit                            | Pollutant        | Pounds Per Hour Limit | Tons Per Year Limit |
|---------------------------------|------------------|-----------------------|---------------------|
| HTBLR010<br>(CO Boiler)         | PM <sub>10</sub> | 34.80                 | 152.43              |
|                                 | VOC              | 10.11                 | 44.30               |
| HTFCC002<br>(FCC Charge Heater) | CO               | 4.94                  | 21.64               |
|                                 | NO <sub>x</sub>  | 5.88                  | 25.76               |
|                                 | PM <sub>10</sub> | .45                   | 1.96                |
|                                 | SO <sub>2</sub>  | 1.92                  | 8.41                |
|                                 | VOC              | .32                   | 1.42                |

<sup>13</sup> (EXHIBIT 2) Permit No. 20246.

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The New Source Review Authorizations References Attachment lists Permit No. 20246 as an incorporated NSR permit.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

The Clean Air Act and EPA's implementing regulations require all Title V permits to contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(a)(3) and (c)(1). The Proposed Permit does not meet this requirement, because it fails to include any monitoring requirements that assure compliance with the above-listed emission limits.

## **3. Inadequacy of the Permit Term**

Each Title V permit must specify monitoring requirements that assure ongoing compliance with each applicable requirement and the permit record for each permit must explain the rationale for the selected monitoring requirements. *Wheelabrator Order* at 10-11. The Proposed Permit incorporates the above-listed emission limits established by Permit No. 20246. Neither the Proposed Permit nor Permit No. 20246 identify monitoring and/or testing requirements that assure compliance with the limits. The Statement of Basis, moreover, does not identify any conditions that assure compliance with the limits. Accordingly, the Proposed Permit fails to comply with 40 C.F.R. § 70.6(a) and (c).

## **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 4-5.

## **5. Analysis of State's Response**

In response to Petitioners' detailed comments regarding the Draft Permit's failure to include monitoring that assures compliance with applicable requirements in Chapter 116 NSR

permits that it incorporated by reference, the Executive Director explained that monitoring provisions in NSR permits are not reviewed as part of the Title V permitting process:

The mentioned NSR permits are not being revised as part of the federal operating permit initial issuance because the FOP cannot authorize new construction or modification. Monitoring concerns regarding the NSR permits are best addressed through the NSR permitting process that provides public comment opportunity when the permits are up for renewal. The Executive Director cannot make changes to the underlying NSR permits as part of the Title V permitting process as NSR is governed by 30 TAC Chapter 116.

Response to Comments at 22.

The Executive Director's response does not rebut Petitioners' demonstration that the Proposed Permit fails to comply with Title V. NSR permit limits are applicable requirements for purposes of Title V and the Proposed Permit must assure compliance with all applicable requirements. 42 U.S.C. § 7661c(a) and (c). The fact that NSR permits are issued pursuant to the TCEQ's Chapter 116 rules and not its Chapter 122 Title V permit rules has no bearing on the Executive Director's obligation to ensure that the Proposed Permit assures compliance with the NSR permit limits it incorporates by reference. Indeed, few—if any—of the limits and operating requirements listed in the Proposed Permit were issued pursuant to the TCEQ's Chapter 122 rules. The purpose of the Title V permitting program is to bring together all the federally enforceable requirements issued under various state and federal rules that apply to each major stationary source in a single document that contains monitoring, recordkeeping, and reporting conditions that assure compliance with each such requirement.

The Proposed Permit is deficient because it fails to assure compliance with emission limits established by Permit No. 20246, which are incorporated by reference into the Proposed Permit. The Executive Director did not rebut Petitioners' demonstration that the Proposed Permit is deficient and the Administrator must object to it.

**D. The Proposed Permit Fails to Establish Monitoring, Recordkeeping, and Reporting Requirements that Assure Compliance with Emission Limits for Pasadena Refining's Boiler #4 and Boiler #6**

**1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit is deficient because it fails to establish monitoring requirements that assure compliance with the following emission limits for combustion units at the Pasadena Refinery authorized by Permit No. 22039:<sup>14</sup>

| Unit                 | Pollutant        | Pounds Per Hour Limit | Tons Per Year Limit |
|----------------------|------------------|-----------------------|---------------------|
| HTBLR004 (Boiler #4) | VOC              | 1.62                  | 7.1                 |
|                      | SO <sub>2</sub>  | 8                     | 35.04               |
|                      | PM               | 3                     | 13.10               |
| HTBLR006 (Boiler #6) | VOC              | 4.94                  | 21.64               |
|                      | SO <sub>2</sub>  | 5.88                  | 25.76               |
|                      | PM <sub>10</sub> | .45                   | 1.96                |
|                      | NH <sub>3</sub>  | 1.92                  | 8.41                |

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The New Source Review Authorizations References Attachment lists Permit No. 22039 as an incorporated NSR permit.

**2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(c)(1) and 70.6(a)(3). The Proposed Permit does not meet this requirement, because it fails to include any monitoring requirements that assure compliance with the above-listed emission limits.

**3. Inadequacy of the Permit Term**

Each Title V permit must specify monitoring requirements that assure ongoing compliance with each applicable requirement and the permit record for each permit must explain the rationale

---

<sup>14</sup> (Exhibit 11) Permit No. 22039.



for the selected monitoring requirements. *Wheelabrator Order* at 10-11. The Proposed Permit does not establish any monitoring requirements that assure compliance with the above-listed limits. While Permit No. 22039 does establish some operating constraints that may be intended to limit potential emissions from the authorized boilers—*e.g.*, heat input limits, opacity limits, and H<sub>2</sub>S fuel gas content limits—the Proposed Permit fails to establish specific monitoring requirements to assure compliance with these operational limits and the permit record fails to explain how these operating constraints—even if properly monitored—assure compliance with the applicable hourly and annual emission limits. *Deer Park Order* at 22.

Special Condition No. 14 of Permit No. 22039 indicates that “[u]pon achieving normal operation, the boiler shall complete initial compliance testing.” However, the Special Condition fails to explain what kind of testing is required, what pollutants must be tested, whether Pasadena Refining is required to document the test results and submit them to the TCEQ, and how the test results should be used to determine compliance with applicable limits. *Deer Park Order* at 22.

Accordingly, the Proposed Permit is deficient because it does not contain provisions that assure compliance with the above-listed emission limits and because the permit record does not explain how the conditions included in the Proposed Permit assure compliance with the above-listed emission limits.

#### **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 6-7.

#### **5. Analysis of State’s Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

**E. The Proposed Permit Fails to Establish Monitoring, Recordkeeping, and Reporting Requirements that Assure Compliance with Emission Limits for Various Units Established by NSR Permit No. 56389**

**1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit is deficient because it fails to establish monitoring requirements that assure compliance with the following emission limits for units at the Pasadena Refinery authorized by Permit No. 56389:<sup>15</sup>

| EPN        | Source Name                                               | Pollutant        | Pounds Per Hour Limit | Tons Per Year Limit |
|------------|-----------------------------------------------------------|------------------|-----------------------|---------------------|
| FEWWS      | Wastewater System Initial                                 | VOC              | 22.32                 | 42.38               |
|            |                                                           | Acetone          | 0.01                  | 0.01                |
|            |                                                           | NH <sub>3</sub>  | 2.13                  | 1.51                |
|            |                                                           | H <sub>2</sub> S | 3.35                  | 1.54                |
| FEWWS      | Wastewater System Final                                   | VOC              | 20.89                 | 39.96               |
|            |                                                           | Acetone          | 0.01                  | 0.01                |
|            |                                                           | NH <sub>3</sub>  | 2.01                  | 1.44                |
|            |                                                           | H <sub>2</sub> S | 2.72                  | 1.44                |
| HTCRU001-S | Atmospheric and Vacuum Tower Heaters                      | VOC              | 3.48                  | 15.23               |
|            |                                                           | PM               | 4.81                  | 21.05               |
|            |                                                           | NH <sub>3</sub>  | 2.90                  | 12.50               |
| HTCRU004   | Crude Tower Heater (50 MMBtu/hr)                          | CO               | 4.10                  | 18.00               |
|            |                                                           | VOC              | 0.30                  | 1.20                |
|            |                                                           | NO <sub>x</sub>  | 3.00                  | 13.10               |
|            |                                                           | PM               | 0.40                  | 1.60                |
|            |                                                           | SO <sub>2</sub>  | 1.60                  | 7.00                |
| HTREF001   | Diesel Hydrotreater Charge Heater No. 1 (22.7 MMBtu/hr)   | CO               | 1.90                  | 1.60                |
|            |                                                           | VOC              | 0.10                  | 0.50                |
|            |                                                           | NO <sub>x</sub>  | 1.40                  | 6.00                |
|            |                                                           | PM               | 0.20                  | 0.70                |
|            |                                                           | SO <sub>2</sub>  | 0.70                  | 3.20                |
| HTREF002   | Diesel Hydrotreater Stripper Heater No. 2 (20.4 MMBtu/hr) | CO               | 1.70                  | 7.40                |
|            |                                                           | VOC              | 0.10                  | 0.50                |
|            |                                                           | NO <sub>x</sub>  | 1.20                  | 5.40                |
|            |                                                           | PM               | 0.20                  | 0.70                |
|            |                                                           | SO <sub>2</sub>  | 0.70                  | 2.90                |
| HTALK001   | Alky Heater No. 1 (80 MMBtu/hr)                           | CO               | 6.60                  | 28.90               |
|            |                                                           | VOC              | 0.40                  | 1.90                |
|            |                                                           | NO <sub>x</sub>  | 4.80                  | 21.00               |

<sup>15</sup> (Exhibit 12) Permit No. 56389.

|          |                                     |                 |      |       |
|----------|-------------------------------------|-----------------|------|-------|
| HTALK002 | Alky Heater No. 2<br>(80 MMBtu/hr)  | PM              | 0.60 | 2.60  |
|          |                                     | SO <sub>2</sub> | 2.60 | 11.20 |
|          |                                     | CO              | 6.60 | 28.90 |
|          |                                     | VOC             | 0.40 | 1.90  |
|          |                                     | NO <sub>x</sub> | 4.80 | 21.00 |
|          |                                     | PM              | 0.60 | 2.60  |
| HTCKR001 | Coker Heater No. 1<br>(95 MMBtu/hr) | SO <sub>2</sub> | 2.60 | 11.20 |
|          |                                     | CO              | 7.80 | 34.30 |
|          |                                     | VOC             | 0.50 | 2.20  |
|          |                                     | NO <sub>x</sub> | 5.70 | 25.00 |
|          |                                     | PM              | 0.70 | 3.10  |
|          |                                     | SO <sub>2</sub> | 3.00 | 13.30 |

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The Proposed Permit's New Source Review Authorizations References Attachment lists Permit No. 56389 as an incorporated NSR permit.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(c)(1) and 70.6(a)(3). The Proposed Permit does not meet this requirement, because it fails to include any monitoring requirements that assure compliance with the above-listed emission limits.

## **3. Inadequacy of the Permit Term**

Each Title V permit must specify monitoring requirements that assure ongoing compliance with each applicable requirement and the permit record for each permit must explain the rationale for the selected monitoring requirements. *Wheelabrator Order* at 10-11. The Proposed Permit does not establish any monitoring requirements that assure compliance with many of the above-listed limits, and the monitoring conditions that the permit does include fail to assure compliance with applicable limits. Moreover, the permit record for this project does not contain an explanation

of the Executive Director's determination that monitoring requirements in the Proposed Permit assure compliance with Permit No. 56389 emission limits.

The only direct emissions monitoring requirement that applies for any of the above-listed emission limits in Permit No. 56389 is a one-time stack test to measure NH<sub>3</sub> emissions from HTCRU001-S and CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions from HTCRU004. Permit No. 56389, Special Condition No. 29. A one-time stack test is not sufficient to assure ongoing compliance with these emission limits, because it does not indicate how much pollution Pasadena Refining's units will emit over all potential operating scenarios through the life to the units. Instead, a stack-test provides a snapshot of the units' performance at a particular point in time, under optimal conditions. Additionally, a single stack test fails to provide sufficient information to demonstrate that process equipment and controls will function properly on an ongoing basis. *In the Matter of Luke Paper Co.*, Order on Petition to Object to Permit No. 24-001-00011 (November 18, 2010) at 5-6.

Permit No. 59389, Special Condition No. 18 instructs Pasadena Refining to determine compliance with the hourly emission limit for HTCRU001-S by monitoring H<sub>2</sub>S concentration in fuel gas fed to the unit. Monitoring H<sub>2</sub>S content of fuel is not sufficient to assure compliance with hourly SO<sub>2</sub> emission limits, because SO<sub>2</sub> emissions also result from the combustion of non-H<sub>2</sub>S sulfur compounds. Information submitted by industry in response to EPA's comprehensive data requires for the petroleum refining section shows that refinery fuel gas often contains a significant concentration of non-H<sub>2</sub>S sulfur compounds that contribute to SO<sub>2</sub> emissions. U.S. EPA, Comprehensive Data Collected from the Petroleum Refining Sector, ICR Component 4 – Emissions Source Testing, Fuel Gas Memo and Summary Table and Fuel Gas Summary Spreadsheet. For example, at one California refinery, the total reduced sulfur content of the fuel

gas was more than 4,000 times higher than the H<sub>2</sub>S content, and on average, the ratio of total reduced sulfur to H<sub>2</sub>S was about 98 to 1. *Id.* As a result, monitoring for H<sub>2</sub>S alone cannot assure compliance with Permit No. 56389's hourly SO<sub>2</sub> limit for HTCRU001-S.

#### **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 12-18.

#### **5. Analysis of State's Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

### **F. The Proposed Permit Fails to Establish Monitoring, Recordkeeping, and Reporting Requirements that Assure Compliance with Emission Limits for Pasadena Refining's Tail Gas Incinerator**

#### **1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit is deficient because it fails to establish any monitoring requirements that assure compliance with the following emission limits for combustion units at the Pasadena Refinery authorized by Permit No. 6059:<sup>16</sup>

| <b>Unit</b>                    | <b>Pollutant</b>               | <b>Pounds Per Hour Limit</b> | <b>Tons Per Year Limit</b> |
|--------------------------------|--------------------------------|------------------------------|----------------------------|
| INSRU001 (Tail Gas Ininerator) | VOC                            | 0.05                         | 0.22                       |
|                                | NO <sub>x</sub>                | 2.18                         | 9.55                       |
|                                | PM <sub>10</sub>               | 0.25                         | 1.10                       |
|                                | CO                             | 15.96                        | 69.90                      |
|                                | H <sub>2</sub> SO <sub>4</sub> | 1.03                         | 4.51                       |

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The Proposed Permit's New Source Review Authorizations References Attachment lists Permit No. 6059 as an incorporated NSR permit.

---

<sup>16</sup> (Exhibit 13) Permit No. 6059.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(a)(3) and (c)(1). The Proposed Permit does not meet this requirement, because it fails to include any monitoring requirements that assure compliance with the above-listed emission limits.

## **3. Inadequacy of the Permit Term**

Each Title V permit must specify monitoring requirements that assure ongoing compliance with each applicable requirement and the permit record for each permit must explain the rationale for the selected monitoring requirements. *Wheelabrator Order* at 10-11. The Proposed Permit incorporates the above-listed emission limits established by Permit No. 6059. Neither the Proposed Permit nor Permit No. 6059 identify monitoring and/or testing requirements that assure compliance with the limits. The Statement of Basis, moreover, does not identify any conditions that assure compliance with the limits. Accordingly, the Proposed Permit fails to comply with 40 C.F.R. § 70.6(a) and (c).

## **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 20.

## **5. Analysis of State's Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

**G. The Proposed Permit Fails to Establish Monitoring, Recordkeeping, and Reporting Requirements that Assure Compliance with Emission Limits for Pasadena Refining's Reformer No. 3 Combined Heaters**

**1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit is deficient because it fails to establish any monitoring requirements that assure compliance with the following emission limits for combustion units at the Pasadena Refinery authorized by Permit No. 5953:<sup>17</sup>

| Unit                                              | Pollutant        | Pounds Per Hour Limit | Tons Per Year Limit |
|---------------------------------------------------|------------------|-----------------------|---------------------|
| HTREF2631<br>(Reformer No. 3<br>Combined Heaters) | SO <sub>2</sub>  | 17.84                 | 78.14               |
|                                                   | NO <sub>x</sub>  | 32.40                 | 141.91              |
|                                                   | PM <sub>10</sub> | 7.40                  | 32.41               |
|                                                   | CO               | 39.94                 | 96.21               |
|                                                   | VOC              | 1.5                   | 6.57                |

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The Proposed Permit's New Source Review Authorizations References Attachment lists Permit No. 5953 as an incorporated NSR permit.

**2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(a)(3) and (c)(1). The Proposed Permit does not meet this requirement, because it fails to include any monitoring requirements that assure compliance with the above-listed emission limits.

**3. Inadequacy of the Permit Term**

Each Title V permit must specify monitoring requirements that assure ongoing compliance with each applicable requirement and the permit record for each permit must explain the rationale

---

<sup>17</sup> (Exhibit 14) Permit No. 5953.

for the selected monitoring requirements. *Wheelabrator Order* at 10-11. The Proposed Permit incorporates the above-listed emission limits established by Permit No. 5953. Neither the Proposed Permit nor Permit No. 5953 identify monitoring and/or testing requirements that assure compliance with the limits. The Statement of Basis, moreover, does not identify any conditions that assure compliance with the limits. Accordingly, the Proposed Permit fails to comply with 40 C.F.R. § 70.6(a) and (c).

#### **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 19.

#### **5. Analysis of State's Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

### **H. The Proposed Permit Fails to Require Monitoring that Assures Compliance with Emission Limits for Pasadena Refining's Flares**

#### **1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit is deficient because it fails to establish monitoring requirements that assure compliance with the following emission limits for flares authorized by Permit Nos. 56389 and 80804:<sup>18</sup>

| <b>EPN</b>             | <b>Source Name</b>               | <b>Pollutant</b> | <b>lb/hr</b> | <b>TPY</b> |
|------------------------|----------------------------------|------------------|--------------|------------|
| FLRFNEAST<br>FLRFNWEST | East and West<br>Flares          | CO               | 161.39       | 53.82      |
|                        |                                  | VOC              | 239.81       | 79.98      |
|                        |                                  | Benzene          | 7.29         | 2.43       |
|                        |                                  | NO <sub>x</sub>  | 31.68        | 10.57      |
|                        |                                  | SO <sub>2</sub>  | 11.86        | 3.99       |
|                        |                                  | H <sub>2</sub> S | 0.13         | 0.04       |
| FLRFNMSS               | MSS from East<br>and West Flares | VOC              | 663.48       | 30.11      |
|                        |                                  | NO <sub>x</sub>  | 58.47        | 4.59       |
|                        |                                  | CO               | 297.93       | 25.73      |

<sup>18</sup> (Exhibit 12) Permit No. 56389 and (Exhibit 9) Permit No. 80804.



|  |  |                  |        |      |
|--|--|------------------|--------|------|
|  |  | SO <sub>2</sub>  | 332.39 | 8.23 |
|  |  | H <sub>2</sub> S | 3.33   | 0.05 |
|  |  | NH <sub>3</sub>  | 1.62   | 0.01 |

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The Proposed Permit's New Source Review Authorizations References Attachment lists Permit Nos. 56389 and 80804 as incorporated NSR permits.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(a)(3) and (c)(1). The Proposed Permit does not meet this requirement, because it fails to include monitoring requirements that assure compliance with the above-listed emission limits.

## **3. Inadequacy of the Permit Term**

The Proposed Permit fails to assure compliance with emission limits for Pasadena Refining's flares, because the permit presumes without justification that the flares will continuously achieve a destruction efficiency of 98%. However, data shows that flares subject to the same monitoring requirements as contained in the Proposed Permit achieved, on average, a destruction efficiency of 93.9%. U.S. EPA Petroleum Refinery Sector Rule: Flare Impact Estimates, EPA-HQ-OAR-2010-0682-0209 (January 16, 2014) at 9. The TCEQ's own analysis confirms EPA's conclusion that applicable monitoring requirements in the Proposed Permit "do[] not ensure that the flare will achieve 98 percent [destruction efficiency]." TCEQ, 2015 Emissions Inventory Guidelines, RG-360/15, A-43 (January 2016).

To prevent over-steaming that frequently interferes with flare performance and to assure compliance with the applicable flare emission limits, the Proposed Permit must be revised to

require Pasadena Refining to use Passive Fourier Transform Infrared Technology or equivalent to monitor the actual deficiency of Pasadena Refining's flares on a continuous bases or to include monitoring equipment and instrumentation that allows Pasadena Refining to maintain a net heat value of 270 but/scf on a 15-minute block period in the combustion zone of its flares. 40 C.F.R. § 63.670(e); *Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards*, 80 Fed. Reg. 75178, 75210 (December 1, 2015).

#### **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in their Initial Comments at 12 and Supplementary Comments at 12-13.

#### **5. Analysis of State's Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

#### **I. The Proposed Permit Fails to Require Monitoring that Assures Compliance with the 90% Removal Efficiency Requirement for Pasadena Refining's Acid Relief Neutralization System**

##### **1. Specific Grounds for Objection, Including Citation to Permit Term**

Permit No. 56389, Special Condition No. 10 provides that "[a]ll waste streams containing HF shall be routed to the acid relief neutralization system, operating with a 90% HF removal efficiency at all time prior to being routed to a flare." The Proposed Permit is deficient because it does not establish any monitoring requirement that assure compliance with this requirement.

Proposed Permit, Special Condition No. 23 incorporates each of the permits listed in its New Source Review Authorization References Attachment. The Proposed Permit's New Source Review Authorizations References Attachment lists Permit Nos. 56389 as an incorporated NSR permit.

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain monitoring requirements that assure compliance with applicable requirements. 42 U.S.C. § 7661c(a) and (c); 40 C.F.R. § 70.6(a)(3) and (c)(1). The Proposed Permit does not meet this requirement, because it fails to include monitoring requirements that assure compliance with the above-listed HF removal efficiency requirement.

## **3. Inadequacy of the Permit Term**

The Proposed Permit is deficient because it fails to establish any monitoring requirement that assures that Pasadena Refining's acid neutralization system will continuously comply with the applicable 90% removal efficiency requirement established by Permit No. 56389, Special Condition No. 10.

## **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in their Supplementary Comments at 14.

## **5. Analysis of State's Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

## **J. The Proposed Permit Fails to Specify and Assure Compliance with Planned Maintenance, Startup, and Shutdown Emission Limits and Operating Requirements for Boiler #6**

### **1. Specific Grounds for Objection, Including Citation to Permit Term**

The Proposed Permit incorporates Permit No. 22039 by reference. Permit No. 22039, Special Condition No. 13 states that:

This permit authorizes maintenance, start-up, and shutdown emissions associated with the operation of the Boiler (EPN HTBLR006) described in the permit application dated August 2006 and subsequent submittals updating that application. Changes to the types of activities in the future will require either an amendment or an alteration of this permit.

This Special Condition is deficient for two reasons: First, it fails to identify the applicable planned maintenance, startup, and shutdown emissions authorized by Permit No. 22039 and which permit application(s) filed after August 2006 contain enforceable requirements related to planned MSS activities at the Pasadena Refinery. Second, the Special Condition suggests that “updates” to previously-approved application representations may be effective prior to their approval by the Executive Director. This is improper, because application representations for projects that have been approved by the Executive Director are enforceable representations that may only be changed through the amendment or alteration process. 30 Tex. Admin. Code § 116.116(a).<sup>19</sup>

## **2. Applicable Requirement or Part 70 Requirement Not Met**

Each Title V permit must contain enforceable emission limits and operating requirements and such conditions necessary to assure compliance with applicable requirements. 42 U.S.C. § 7661(a) and (c); 40 C.F.R. § 70.6(a) and (c). Applicable requirements include requirements in preconstruction permits and federally-approved preconstruction permitting rules. 40 C.F.R. § 70.2.

Texas’s federally-approved preconstruction permitting rules provide that special conditions and emission limits in preconstruction permits issued by the TCEQ and representations in applications for approved permits are enforceable requirements. 30 Tex. Admin. Code § 116.116.

---

<sup>19</sup> The Executive Director acknowledges this fact in his Response to Comments at 9 (“While it is true that there may be pending permit actions occurring during the Title V permit process, the federal operating permit can only address those permits that are currently authorized. Any subsequent changes to underlying NSR authorizations that will impact the Title V permit will be addressed through the Title V revision process.”).

### **3. Inadequacy of the Permit Term**

Permit No. 22039, Special Condition No. 13 fails to assure compliance with applicable requirements, because it fails to actually identify what the applicable planned MSS requirements are or indicate where they can be found. The Proposed Permit may not incorporate by reference NSR permit application representations for projects that have not been approved. Changes to representations after August 2006 must be authorized by a permit amendment or alteration to Permit No. 22039, 30 Tex. Admin. Code § 116.116, and the revised requirements must be brought into the Title V permit by a Title V permit revision before they become enforceable requirements of the Proposed Permit. *Id.* at § 122.210(a).

Moreover, the Draft Permit's incorporation by reference of Permit No. 22039, Special Condition No. 13, which incorporates by reference representations in an unspecified number of permit applications makes it too difficult for those wishing to comment on the draft permit and to enforce the requirements of the final issued Title V permit to determine what the applicable requirement are. To assure compliance with applicable requirements, either Permit No. 22039 or the Proposed Permit must directly identify the applicable requirements regarding planned MSS emissions associated with the operation of the boiler HTBLR006 described in Pasadena Refining's application(s). *Granite City I Order* at 43.

### **4. Issue Raised in Public Comments**

Petitioners raised this issue with reasonable specificity in the Supplementary Comments at 8.

### **5. Analysis of State's Response**

*See*, Section C.5 on pages 31-32 of the Petition above.

## **VI. CONCLUSION**

For the foregoing reasons, and as explained in Petitioners' timely-filed public comments, the Proposed Permit is deficient. The Executive Director's Response to Comments failed to address Petitioners' significant comments. Accordingly, the Clean Air Act and EPA's 40 C.F.R. Part 70 rules require that the Administrator object to the Proposed Permit.

Sincerely,

/s/ Gabriel Clark-Leach

Gabriel Clark-Leach  
Environmental Integrity Project  
707 Rio Grande, Suite 200  
Austin, TX 78701  
(512) 637-9478 (phone)  
(512) 584-8019 (fax)  
[gclark-leach@environmentalintegrity.org](mailto:gclark-leach@environmentalintegrity.org)

# **EXHIBIT B**

## **Notice of Intent to Sue Letter**



1206 San Antonio Street  
Austin, TX 78701  
Phone: (512) 637-9478  
[www.environmentalintegrity.org](http://www.environmentalintegrity.org)

February 14, 2017

Acting Administrator Catherine McCabe  
U.S. Environmental Protection Agency  
Ariel Rios Building, Mail Code 1101A  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460  
Fax number (202) 501-1450

*Via Certified Mail*

**RE:** Notice of Intent to Sue for Failure to Timely Grant or Deny a Petition to Object to Part 70 Operating Permit No. O3711 Issued to Pasadena Refining System Inc. for the Pasadena Refinery in Harris County, Texas

Dear Administrator McCabe:

With this letter, the Environmental Integrity Project, Texas Environmental Justice Advocacy Services, Sierra Club, and Air Alliance Houston ("Plaintiffs") are giving you notice of our intent to sue you in your official capacity as Administrator of the U.S. Environmental Protection Agency for your failure to timely respond to our petition to object to the Part 70 Operating Permit (Title V permit) No. O3711 issued to Pasadena Refining System Inc. for operation of the Pasadena Refinery in Harris County, Texas. Plaintiffs timely filed their petition on November 8, 2016, within 60 days following the end of EPA's 45-day review period for the Title V permit.<sup>1</sup> Though more than 60 days have passed since Plaintiffs filed their petition, you have not yet granted or denied the petition, as required by 42 U.S.C. § 7661d(b)(2).

#### **Authority to Bring Suit**

Clean Air Act, Section 304(a)(2) authorizes a citizen suit in federal district court "against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator." 42 U.S.C. § 7604(a)(2). You have failed to perform your nondiscretionary duty to grant or deny Plaintiffs' petition within 60 days of receipt. 42 U.S.C. § 7661d(b)(2). Plaintiffs are hereby giving you the required 60-day notice of our intent to bring a citizen suit to compel you to expeditiously grant or deny our petition.

---

<sup>1</sup> Plaintiffs' Title V petition is included with this NOI as Attachment I.



If you fail to grant or deny Plaintiffs' petition within 60 days after receiving this notice, Plaintiffs will file suit in federal district court to compel your response.

**Relief Requested**

Plaintiffs will seek the following relief:

1. An order compelling you to expeditiously grant or deny the Petition;
2. Attorney's fees and other litigation costs; and
3. Other appropriate relief as allowed.

**Parties**

As required by 40 C.F.R. § 54.3, the persons providing this notice are:

Environmental Integrity Project  
1206 San Antonio Street  
Austin, Texas 78701  
Attn: Gabriel Clark-Leach  
Tel: (512) 637-9478

Texas Environmental Justice Advocacy Services  
6733 Harrisburg  
Houston, Texas 77011  
Attn: Ana M. Parras  
Tel: (713) 371-7721

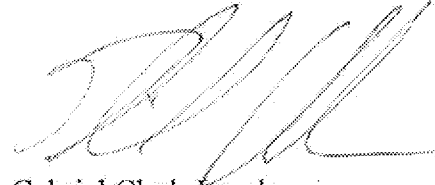
Sierra Club  
2101 Webster Street, Suite 1300  
Oakland, California 94612  
Attn: Aaron Isherwood  
Tel: 415-977-5680

Air Alliance Houston  
3914 Leeland  
Houston, Texas 77003  
Attn: Adrian Shelley  
Tel: (713) 528-3779

While EPA regulations require this information, please direct all correspondence and communications regarding this matter to the undersigned attorney.

If you have any questions regarding this notice letter, believe any of the foregoing information to be in error, or would otherwise like to discuss settlement of this matter, please contact Gabriel Clark-Leach at (512) 637-9478 or [gclark-leach@environmentalintegrity.org](mailto:gclark-leach@environmentalintegrity.org).

Sincerely,



Gabriel Clark-Leach  
Environmental Integrity Project  
1206 San Antonio Street  
Austin, TX 78701  
(512) 637-9478 (phone)  
(512) 584-8019 (fax)  
[gclark-leach@environmentalintegrity.org](mailto:gclark-leach@environmentalintegrity.org)

**Attorney for Plaintiffs**

Environmental Integrity Project,  
Sierra Club, and Air Alliance Houston

Attachment

cc: (Via Certified Mail)

Jeff B. Sessions, Attorney General  
U.S. Department of Justice  
950 Pennsylvania Avenue, NW  
Washington, DC 20530-0001

Samuel Coleman, Acting Regional Administrator  
U.S. EPA Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733

Steve Hagle, P.E.  
Office of Air Deputy Director, MC-122  
Texas Commission on Environmental Quality  
P.O Box 13087  
Austin, Texas 78711-3087

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Administrator McCabe  
 U.S. EPA  
 Ariel Rios Building MC161A  
 1200 Pennsylvania Ave, N.W.  
 Washington, DC 20460

2. Article

(Transit)

7010 0290 0000 4382 4790

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

Mail  
Manager☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

FEB 21 2017

3. Service Type

☐ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

## CIVIL COVER SHEET

JS-44 (Rev. 6/17 DC)

|                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>I. (a) PLAINTIFFS</b><br>Environmental Integrity Project,<br>Texas Environmental Justice Advocacy Services,<br>Sierra Club, and<br>Air Alliance Houston<br><br>(b) COUNTY OF RESIDENCE OF FIRST LISTED PLAINTIFF <u>11001</u><br>(EXCEPT IN U.S. PLAINTIFF CASES) | <b>DEFENDANTS</b><br>Scott Pruitt, in his official capacity as Administrator, U.S.<br>Environmental Protection Agency<br><br>COUNTY OF RESIDENCE OF FIRST LISTED DEFENDANT _____<br>(IN U.S. PLAINTIFF CASES ONLY)<br><small>NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED</small> |
| (c) ATTORNEYS (FIRM NAME, ADDRESS, AND TELEPHONE NUMBER)<br>Adam Kron<br>Environmental Integrity Project<br>1000 Vermont Ave. NW, Suite 1100<br>Washington, DC 20005<br>(202) 263-4451                                                                               | ATTORNEYS (IF KNOWN)                                                                                                                                                                                                                                                                                                  |

| <b>II. BASIS OF JURISDICTION</b><br>(PLACE AN x IN ONE BOX ONLY) <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="radio"/> 1 U.S. Government Plaintiff         </div> <div style="width: 48%;"> <input type="radio"/> 3 Federal Question (U.S. Government Not a Party)         </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 48%;"> <input checked="" type="radio"/> 2 U.S. Government Defendant         </div> <div style="width: 48%;"> <input type="radio"/> 4 Diversity (Indicate Citizenship of Parties in item III)         </div> </div> | <b>III. CITIZENSHIP OF PRINCIPAL PARTIES</b> (PLACE AN x IN ONE BOX FOR PLAINTIFF AND ONE BOX FOR DEFENDANT) <b>FOR DIVERSITY CASES ONLY!</b> <table style="width: 100%; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;">PTF</th> <th style="text-align: center;">DFT</th> <th></th> <th style="text-align: center;">PTF</th> <th style="text-align: center;">DFT</th> </tr> </thead> <tbody> <tr> <td>Citizen of this State</td> <td style="text-align: center;"><input type="radio"/> 1</td> <td style="text-align: center;"><input type="radio"/> 1</td> <td>Incorporated or Principal Place of Business in This State</td> <td style="text-align: center;"><input type="radio"/> 4</td> <td style="text-align: center;"><input type="radio"/> 4</td> </tr> <tr> <td>Citizen of Another State</td> <td style="text-align: center;"><input type="radio"/> 2</td> <td style="text-align: center;"><input type="radio"/> 2</td> <td>Incorporated and Principal Place of Business in Another State</td> <td style="text-align: center;"><input type="radio"/> 5</td> <td style="text-align: center;"><input type="radio"/> 5</td> </tr> <tr> <td>Citizen or Subject of a Foreign Country</td> <td style="text-align: center;"><input type="radio"/> 3</td> <td style="text-align: center;"><input type="radio"/> 3</td> <td>Foreign Nation</td> <td style="text-align: center;"><input type="radio"/> 6</td> <td style="text-align: center;"><input type="radio"/> 6</td> </tr> </tbody> </table> |                         | PTF                                                           | DFT                     |                         | PTF | DFT | Citizen of this State | <input type="radio"/> 1 | <input type="radio"/> 1 | Incorporated or Principal Place of Business in This State | <input type="radio"/> 4 | <input type="radio"/> 4 | Citizen of Another State | <input type="radio"/> 2 | <input type="radio"/> 2 | Incorporated and Principal Place of Business in Another State | <input type="radio"/> 5 | <input type="radio"/> 5 | Citizen or Subject of a Foreign Country | <input type="radio"/> 3 | <input type="radio"/> 3 | Foreign Nation | <input type="radio"/> 6 | <input type="radio"/> 6 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------|-------------------------|-------------------------|-----|-----|-----------------------|-------------------------|-------------------------|-----------------------------------------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------------------------------------------|-------------------------|-------------------------|-----------------------------------------|-------------------------|-------------------------|----------------|-------------------------|-------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PTF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DFT                     |                                                               | PTF                     | DFT                     |     |     |                       |                         |                         |                                                           |                         |                         |                          |                         |                         |                                                               |                         |                         |                                         |                         |                         |                |                         |                         |
| Citizen of this State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <input type="radio"/> 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="radio"/> 1 | Incorporated or Principal Place of Business in This State     | <input type="radio"/> 4 | <input type="radio"/> 4 |     |     |                       |                         |                         |                                                           |                         |                         |                          |                         |                         |                                                               |                         |                         |                                         |                         |                         |                |                         |                         |
| Citizen of Another State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="radio"/> 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="radio"/> 2 | Incorporated and Principal Place of Business in Another State | <input type="radio"/> 5 | <input type="radio"/> 5 |     |     |                       |                         |                         |                                                           |                         |                         |                          |                         |                         |                                                               |                         |                         |                                         |                         |                         |                |                         |                         |
| Citizen or Subject of a Foreign Country                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input type="radio"/> 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="radio"/> 3 | Foreign Nation                                                | <input type="radio"/> 6 | <input type="radio"/> 6 |     |     |                       |                         |                         |                                                           |                         |                         |                          |                         |                         |                                                               |                         |                         |                                         |                         |                         |                |                         |                         |

## IV. CASE ASSIGNMENT AND NATURE OF SUIT

(Place an X in one category, A-N, that best represents your Cause of Action and one in a corresponding Nature of Suit)

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="radio"/> <b>A. Antitrust</b><br><br><input type="checkbox"/> 410 Antitrust | <input type="radio"/> <b>B. Personal Injury/Malpractice</b><br><br><input type="checkbox"/> 310 Airplane<br><input type="checkbox"/> 315 Airplane Product Liability<br><input type="checkbox"/> 320 Assault, Libel & Slander<br><input type="checkbox"/> 330 Federal Employers Liability<br><input type="checkbox"/> 340 Marine<br><input type="checkbox"/> 345 Marine Product Liability<br><input type="checkbox"/> 350 Motor Vehicle<br><input type="checkbox"/> 355 Motor Vehicle Product Liability<br><input type="checkbox"/> 360 Other Personal Injury<br><input type="checkbox"/> 362 Medical Malpractice<br><input type="checkbox"/> 365 Product Liability<br><input type="checkbox"/> 367 Health Care/Pharmaceutical<br>Personal Injury Product Liability<br><input type="checkbox"/> 368 Asbestos Product Liability | <input checked="" type="radio"/> <b>C. Administrative Agency Review</b><br><br><input type="checkbox"/> 151 Medicare Act<br><br><u>Social Security</u><br><input type="checkbox"/> 861 HIA (1395ff)<br><input type="checkbox"/> 862 Black Lung (923)<br><input type="checkbox"/> 863 DIWC/DIWW (405(g))<br><input type="checkbox"/> 864 SSID Title XVI<br><input type="checkbox"/> 865 RSI (405(g))<br><u>Other Statutes</u><br><input type="checkbox"/> 891 Agricultural Acts<br><input checked="" type="checkbox"/> 893 Environmental Matters<br><input type="checkbox"/> 890 Other Statutory Actions (If Administrative Agency is Involved) | <input type="radio"/> <b>D. Temporary Restraining Order/Preliminary Injunction</b><br><br>Any nature of suit from any category may be selected for this category of case assignment.<br><br>*(If Antitrust, then A governs)* |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                  |                                                      |
|------------------------------------------------------------------|------------------------------------------------------|
| <input checked="" type="radio"/> <b>E. General Civil (Other)</b> | <input type="radio"/> <b>F. Pro Se General Civil</b> |
|------------------------------------------------------------------|------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Real Property</u><br><input type="checkbox"/> 210 Land Condemnation<br><input type="checkbox"/> 220 Foreclosure<br><input type="checkbox"/> 230 Rent, Lease & Ejectment<br><input type="checkbox"/> 240 Torts to Land<br><input type="checkbox"/> 245 Tort Product Liability<br><input type="checkbox"/> 290 All Other Real Property<br><br><u>Personal Property</u><br><input type="checkbox"/> 370 Other Fraud<br><input type="checkbox"/> 371 Truth in Lending<br><input type="checkbox"/> 380 Other Personal Property<br>Damage<br><input type="checkbox"/> 385 Property Damage<br>Product Liability | <u>Bankruptcy</u><br><input type="checkbox"/> 422 Appeal 27 USC 158<br><input type="checkbox"/> 423 Withdrawal 28 USC 157<br><br><u>Prisoner Petitions</u><br><input type="checkbox"/> 535 Death Penalty<br><input type="checkbox"/> 540 Mandamus & Other<br><input type="checkbox"/> 550 Civil Rights<br><input type="checkbox"/> 555 Prison Conditions<br><input type="checkbox"/> 560 Civil Detainee – Conditions of Confinement<br><br><u>Property Rights</u><br><input type="checkbox"/> 820 Copyrights<br><input type="checkbox"/> 830 Patent<br><input type="checkbox"/> 835 Patent – Abbreviated New Drug Application<br><input type="checkbox"/> 840 Trademark | <u>Federal Tax Suits</u><br><input type="checkbox"/> 870 Taxes (US plaintiff or defendant)<br><input type="checkbox"/> 871 IRS-Third Party 26 USC 7609<br><br><u>Forfeiture/Penalty</u><br><input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881<br><input type="checkbox"/> 690 Other<br><br><u>Other Statutes</u><br><input type="checkbox"/> 375 False Claims Act<br><input type="checkbox"/> 376 Qui Tam (31 USC 3729(a))<br><input type="checkbox"/> 400 State Reapportionment<br><input type="checkbox"/> 430 Banks & Banking<br><input type="checkbox"/> 450 Commerce/ICC Rates/etc.<br><input type="checkbox"/> 460 Deportation | <input type="checkbox"/> 462 Naturalization Application<br><input type="checkbox"/> 465 Other Immigration Actions<br><input type="checkbox"/> 470 Racketeer Influenced & Corrupt Organization<br><input type="checkbox"/> 480 Consumer Credit<br><input type="checkbox"/> 490 Cable/Satellite TV<br><input type="checkbox"/> 850 Securities/Commodities/Exchange<br><input type="checkbox"/> 896 Arbitration<br><input type="checkbox"/> 899 Administrative Procedure Act/Review or Appeal of Agency Decision<br><input type="checkbox"/> 950 Constitutionality of State Statutes<br><input type="checkbox"/> 890 Other Statutory Actions (if not administrative agency review or Privacy Act) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="radio"/> <b>G. Habeas Corpus/ 2255</b><br><br><input type="checkbox"/> 530 Habeas Corpus – General<br><input type="checkbox"/> 510 Motion/Vacate Sentence<br><input type="checkbox"/> 463 Habeas Corpus – Alien Detainee                                                                                                                                                                              | <input type="radio"/> <b>H. Employment Discrimination</b><br><br><input type="checkbox"/> 442 Civil Rights – Employment (criteria: race, gender/sex, national origin, discrimination, disability, age, religion, retaliation)<br><br>*(If pro se, select this deck)*                                                                                                                                                                 | <input type="radio"/> <b>I. FOIA/Privacy Act</b><br><br><input type="checkbox"/> 895 Freedom of Information Act<br><input type="checkbox"/> 890 Other Statutory Actions (if Privacy Act)<br><br>*(If pro se, select this deck)*                                                                                                                                                                                                                                                                                                                                                                         | <input type="radio"/> <b>J. Student Loan</b><br><br><input type="checkbox"/> 152 Recovery of Defaulted Student Loan (excluding veterans) |
| <input type="radio"/> <b>K. Labor/ERISA (non-employment)</b><br><br><input type="checkbox"/> 710 Fair Labor Standards Act<br><input type="checkbox"/> 720 Labor/Mgmt. Relations<br><input type="checkbox"/> 740 Labor Railway Act<br><input type="checkbox"/> 751 Family and Medical Leave Act<br><input type="checkbox"/> 790 Other Labor Litigation<br><input type="checkbox"/> 791 Empl. Ret. Inc. Security Act | <input type="radio"/> <b>L. Other Civil Rights (non-employment)</b><br><br><input type="checkbox"/> 441 Voting (if not Voting Rights Act)<br><input type="checkbox"/> 443 Housing/Accommodations<br><input type="checkbox"/> 440 Other Civil Rights<br><input type="checkbox"/> 445 Americans w/Disabilities – Employment<br><input type="checkbox"/> 446 Americans w/Disabilities – Other<br><input type="checkbox"/> 448 Education | <input type="radio"/> <b>M. Contract</b><br><br><input type="checkbox"/> 110 Insurance<br><input type="checkbox"/> 120 Marine<br><input type="checkbox"/> 130 Miller Act<br><input type="checkbox"/> 140 Negotiable Instrument<br><input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment<br><input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits<br><input type="checkbox"/> 160 Stockholder's Suits<br><input type="checkbox"/> 190 Other Contracts<br><input type="checkbox"/> 195 Contract Product Liability<br><input type="checkbox"/> 196 Franchise | <input type="radio"/> <b>N. Three-Judge Court</b><br><br><input type="checkbox"/> 441 Civil Rights – Voting (if Voting Rights Act)       |

**V. ORIGIN**  
☒ 1 Original Proceeding  
 ☐ 2 Removed from State Court  
 ☐ 3 Remanded from Appellate Court  
 ☐ 4 Reinstated or Reopened  
 ☐ 5 Transferred from another district (specify)  
 ☐ 6 Multi-district Litigation  
 ☐ 7 Appeal to District Judge from Mag. Judge  
 ☐ 8 Multi-district Litigation – Direct File

**VI. CAUSE OF ACTION (CITE THE U.S. CIVIL STATUTE UNDER WHICH YOU ARE FILING AND WRITE A BRIEF STATEMENT OF CAUSE.)**  
 42 U.S.C. 7604(a)(2), failure to perform a nondiscretionary act or duty

|                                     |                                                                            |                                                          |                                                                       |
|-------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------|
| <b>VII. REQUESTED IN COMPLAINT</b>  | CHECK IF THIS IS A CLASS ACTION UNDER F.R.C.P. 23 <input type="checkbox"/> | DEMAND \$ 0                                              | JURY DEMAND: YES <input type="checkbox"/> NO <input type="checkbox"/> |
| <b>VIII. RELATED CASE(S) IF ANY</b> | (See instruction)                                                          | YES <input type="checkbox"/> NO <input type="checkbox"/> | If yes, please complete related case form                             |

|                  |                                                |
|------------------|------------------------------------------------|
| DATE: 07/20/2017 | SIGNATURE OF ATTORNEY OF RECORD: /s/ Adam Kron |
|------------------|------------------------------------------------|

**INSTRUCTIONS FOR COMPLETING CIVIL COVER SHEET JS-44**  
**Authority for Civil Cover Sheet**

The JS-44 civil cover sheet and the information contained herein neither replaces nor supplements the filings and services of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. Consequently, a civil cover sheet is submitted to the Clerk of Court for each civil complaint filed. Listed below are tips for completing the civil cover sheet. These tips coincide with the Roman Numerals on the cover sheet.

- I.** COUNTY OF RESIDENCE OF FIRST LISTED PLAINTIFF/DEFENDANT (b) County of residence: Use 11001 to indicate plaintiff if resident of Washington, DC, 88888 if plaintiff is resident of United States but not Washington, DC, and 99999 if plaintiff is outside the United States.
- III.** CITIZENSHIP OF PRINCIPAL PARTIES: This section is completed only if diversity of citizenship was selected as the Basis of Jurisdiction under Section II.
- IV.** CASE ASSIGNMENT AND NATURE OF SUIT: The assignment of a judge to your case will depend on the category you select that best represents the primary cause of action found in your complaint. You may select only one category. You must also select one corresponding nature of suit found under the category of the case.
- VI.** CAUSE OF ACTION: Cite the U.S. Civil Statute under which you are filing and write a brief statement of the primary cause.
- VIII.** RELATED CASE(S), IF ANY: If you indicated that there is a related case, you must complete a related case form, which may be obtained from the Clerk's Office.

Because of the need for accurate and complete information, you should ensure the accuracy of the information provided prior to signing the form.

**UNITED STATES DISTRICT COURT**  
for the  
District of Columbia

Environmental Integrity Project, Texas Environmental  
Justice Advocacy Services, Air Alliance Houston, and  
Sierra Club

*Plaintiff(s)*

v.

Scott Pruitt, in his official capacity as the  
Administrator of the United States Environmental  
Protection Agency

*Defendant(s)*

Civil Action No.

**SUMMONS IN A CIVIL ACTION**

To: *(Defendant's name and address)* Scott Pruitt, Administrator  
U.S. Environmental Protection Agency  
William Jefferson Clinton Building  
1200 Pennsylvania, Ave NW, Mail Code 1101A  
Washington, DC 20460

A lawsuit has been filed against you.

Within 21 days after service of this summons on you (not counting the day you received it) — or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) — you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address are: Adam Kron  
Environmental Integrity Project  
1000 Vermont Ave. NW, Suite 1100  
Washington, DC 20005

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

*CLERK OF COURT*

Date: \_\_\_\_\_

\_\_\_\_\_  
*Signature of Clerk or Deputy Clerk*

Civil Action No. \_\_\_\_\_

**PROOF OF SERVICE***(This section should not be filed with the court unless required by Fed. R. Civ. P. 4 (l))*

This summons for *(name of individual and title, if any)* \_\_\_\_\_  
 was received by me on *(date)* \_\_\_\_\_.

☐ I personally served the summons on the individual at *(place)* \_\_\_\_\_  
 \_\_\_\_\_ on *(date)* \_\_\_\_\_; or

☐ I left the summons at the individual's residence or usual place of abode with *(name)* \_\_\_\_\_  
 \_\_\_\_\_, a person of suitable age and discretion who resides there,  
 on *(date)* \_\_\_\_\_, and mailed a copy to the individual's last known address; or

☐ I served the summons on *(name of individual)* \_\_\_\_\_, who is  
 designated by law to accept service of process on behalf of *(name of organization)* \_\_\_\_\_  
 \_\_\_\_\_ on *(date)* \_\_\_\_\_; or

☐ I returned the summons unexecuted because \_\_\_\_\_; or

☐ Other *(specify)*: \_\_\_\_\_

My fees are \$ \_\_\_\_\_ for travel and \$ \_\_\_\_\_ for services, for a total of \$ \_\_\_\_\_ 0.00 .

I declare under penalty of perjury that this information is true.

Date: \_\_\_\_\_

\_\_\_\_\_  
*Server's signature*

\_\_\_\_\_  
*Printed name and title*

\_\_\_\_\_  
*Server's address*

Additional information regarding attempted service, etc:



## District of Columbia

Defendant(s)

Civil Action No.

## ED 002691 00000139-00070

Civil Action No. \_\_\_\_\_

**PROOF OF SERVICE***(This section should not be filed with the court unless required by Fed. R. Civ. P. 4 (l))*

This summons for *(name of individual and title, if any)* \_\_\_\_\_  
 was received by me on *(date)* \_\_\_\_\_.

☐ I personally served the summons on the individual at *(place)* \_\_\_\_\_  
 \_\_\_\_\_ on *(date)* \_\_\_\_\_; or

☐ I left the summons at the individual's residence or usual place of abode with *(name)* \_\_\_\_\_  
 \_\_\_\_\_, a person of suitable age and discretion who resides there,  
 on *(date)* \_\_\_\_\_, and mailed a copy to the individual's last known address; or

☐ I served the summons on *(name of individual)* \_\_\_\_\_, who is  
 designated by law to accept service of process on behalf of *(name of organization)* \_\_\_\_\_  
 \_\_\_\_\_ on *(date)* \_\_\_\_\_; or

☐ I returned the summons unexecuted because \_\_\_\_\_; or

☐ Other *(specify)*: \_\_\_\_\_

My fees are \$ \_\_\_\_\_ for travel and \$ \_\_\_\_\_ for services, for a total of \$ \_\_\_\_\_ 0.00 .

I declare under penalty of perjury that this information is true.

Date: \_\_\_\_\_

\_\_\_\_\_  
*Server's signature*

\_\_\_\_\_  
*Printed name and title*

\_\_\_\_\_  
*Server's address*

Additional information regarding attempted service, etc:

AO 440 (Rev. 06/12) Summons in a Civil Action

**UNITED STATES DISTRICT COURT**  
for the  
District of Columbia

Environmental Integrity Project, Texas Environmental  
Justice Advocacy Services, Air Alliance Houston, and  
Sierra Club

*Plaintiff(s)*

v.

Scott Pruitt, in his official capacity as the  
Administrator of the United States Environmental  
Protection Agency

*Defendant(s)*

Civil Action No.

**SUMMONS IN A CIVIL ACTION**

To: *(Defendant's name and address)* Channing D. Phillips  
c/o Civil Process Clerk  
United States Attorney's Office  
555 4th Street NW  
Washington, DC 20530

A lawsuit has been filed against you.

Within 21 days after service of this summons on you (not counting the day you received it) — or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) — you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address are: Adam Kron  
Environmental Integrity Project  
1000 Vermont Ave. NW, Suite 1100  
Washington, DC 20005

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

*CLERK OF COURT*

Date: \_\_\_\_\_

\_\_\_\_\_  
*Signature of Clerk or Deputy Clerk*

Civil Action No. \_\_\_\_\_

**PROOF OF SERVICE***(This section should not be filed with the court unless required by Fed. R. Civ. P. 4 (l))*

This summons for *(name of individual and title, if any)* \_\_\_\_\_  
 was received by me on *(date)* \_\_\_\_\_.

☐ I personally served the summons on the individual at *(place)* \_\_\_\_\_  
 \_\_\_\_\_ on *(date)* \_\_\_\_\_; or

☐ I left the summons at the individual's residence or usual place of abode with *(name)* \_\_\_\_\_  
 \_\_\_\_\_, a person of suitable age and discretion who resides there,  
 on *(date)* \_\_\_\_\_, and mailed a copy to the individual's last known address; or

☐ I served the summons on *(name of individual)* \_\_\_\_\_, who is  
 designated by law to accept service of process on behalf of *(name of organization)* \_\_\_\_\_  
 \_\_\_\_\_ on *(date)* \_\_\_\_\_; or

☐ I returned the summons unexecuted because \_\_\_\_\_; or

☐ Other *(specify)*: \_\_\_\_\_

My fees are \$ \_\_\_\_\_ for travel and \$ \_\_\_\_\_ for services, for a total of \$ 0.00.

I declare under penalty of perjury that this information is true.

Date: \_\_\_\_\_

\_\_\_\_\_  
*Server's signature*

\_\_\_\_\_  
*Printed name and title*

\_\_\_\_\_  
*Server's address*

Additional information regarding attempted service, etc:

Message

---

**From:** Fotouhi, David [fotouhi.david@epa.gov]  
**Sent:** 6/21/2017 4:56:09 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]  
**Subject:** RE: BNA: Court should restart landfill methane rule, advocates say, 6/20/17  
**Attachments:** document\_pm\_01.pdf

Dropping Justin and Erik. The reply from enviros in the NSPS O&G 90-day stay challenge is attached.

**David Fotouhi**

Deputy General Counsel  
Office of General Counsel  
U.S. Environmental Protection Agency  
Tel: +1 202.564.1976  
[fotouhi.david@epa.gov](mailto:fotouhi.david@epa.gov)

---

**From:** Bolen, Brittany  
**Sent:** Wednesday, June 21, 2017 12:45 PM  
**To:** Schwab, Justin <[schwab.justin@epa.gov](mailto:schwab.justin@epa.gov)>; Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>  
**Cc:** Baptist, Erik <[baptist.erik@epa.gov](mailto:baptist.erik@epa.gov)>; Fotouhi, David <[fotouhi.david@epa.gov](mailto:fotouhi.david@epa.gov)>  
**Subject:** RE: BNA: Court should restart landfill methane rule, advocates say, 6/20/17

Thanks for flagging. Can you please circulate the enviro reply brief?

---

**From:** Schwab, Justin  
**Sent:** Wednesday, June 21, 2017 12:38 PM  
**To:** Gunasekara, Mandy <[Gunasekara.Mandy@epa.gov](mailto:Gunasekara.Mandy@epa.gov)>; Dravis, Samantha <[dravis.samantha@epa.gov](mailto:dravis.samantha@epa.gov)>; Bolen, Brittany <[bolen.brittany@epa.gov](mailto:bolen.brittany@epa.gov)>  
**Cc:** Baptist, Erik <[baptist.erik@epa.gov](mailto:baptist.erik@epa.gov)>; Fotouhi, David <[fotouhi.david@epa.gov](mailto:fotouhi.david@epa.gov)>  
**Subject:** FW: BNA: Court should restart landfill methane rule, advocates say, 6/20/17

Second suit on the 90-day stays (following the suit on the O&G NSPS one)

---

**From:** So, Katherine  
**Sent:** Tuesday, June 20, 2017 9:28 AM  
**To:** AO OPA OMR CLIPS <[AO\\_OPA\\_OMR\\_CLIPS@epa.gov](mailto:AO_OPA_OMR_CLIPS@epa.gov)>  
**Subject:** BNA: Court should restart landfill methane rule, advocates say, 6/20/17

**BNA**  
[http://esweb.bna.com/eslw/1245/split\\_display.adp?fedfid=114519072&vname=denotallissues&wsn=498913500&searchid=29890064&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=0](http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=114519072&vname=denotallissues&wsn=498913500&searchid=29890064&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=0)  
**Court should restart landfill methane rule, advocates say**  
By David Schultz 6/20/17

Three environmental advocacy groups want a federal appeals court to resurrect EPA limits on methane emissions from landfills.

The Natural Resources Defense Council, Clean Air Council, and Clean Wisconsin, are challenging the Environmental Protection Agency's decision to halt enforcement of the landfill methane regulation for 90 days. The agency said it

wanted to pause implementation while it weighed possible changes to the rule, which was enacted during the Obama administration as a part of its Climate Action Plan (*Nat. Res. Def. Council v. Pruitt*, D.C. Cir., No. 17-1157, 6/15/17).

The regulation requires landfill operators to use new technology to trap more methane than in the past. Several landfill operators, including Waste Management Inc., asked the EPA to reconsider this rule because they said its emissions thresholds are too difficult to meet and the technology required would be too costly.

Two of the petitioners are involved in a separate lawsuit challenging the EPA's stay of methane rules on the oil and gas industry.

Katherine So  
Office of Media Relations Intern  
U.S. Environmental Protection Agency  
Telephone: (202)-564-4511  
[so.katherine@epa.gov](mailto:so.katherine@epa.gov)

**ORAL ARGUMENT NOT YET SCHEDULED**

**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

No. 17-1145

---

CLEAN AIR COUNCIL, EARTHWORKS, ENVIRONMENTAL DEFENSE FUND,  
ENVIRONMENTAL INTEGRITY PROJECT, NATURAL RESOURCES DEFENSE  
COUNCIL, AND SIERRA CLUB,

Petitioners,

v.

SCOTT PRUITT, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY, AND UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY,

Respondents.

---

**REPLY TO RESPONSES IN OPPOSITION TO  
EMERGENCY MOTION FOR A STAY OR,  
IN THE ALTERNATIVE, SUMMARY VACATUR**

---

SUSANNAH L. WEAVER  
SEAN H. DONAHUE  
Donahue & Goldberg, LLP  
1111 14th Street, NW, Ste. 510A  
Washington, DC 20005  
Telephone: (202) 569-3818  
Facsimile: (202) 289-8009  
susannah@donahuegoldberg.com  
*Counsel for Petitioner  
Environmental Defense Fund*

PETER ZALZAL  
ALICE HENDERSON  
VICKIE PATTON  
Environmental Defense Fund  
2060 Broadway, Ste. 300  
Boulder, CO 80302  
Telephone: (303) 447-7214  
[pzalzal@edf.org](mailto:pzalzal@edf.org)  
TOMÁS CARBONELL  
Environmental Defense Fund  
1875 Connecticut Ave., 6th Floor  
Washington, D.C., 20009  
Telephone: (202) 572-3610  
[tcarbonell@edf.org](mailto:tcarbonell@edf.org)  
*Counsel for Petitioner Environmental  
Defense Fund*

ANDRES RESTREPO  
Sierra Club  
50 F St., NW, 8th Floor  
Washington, DC 20001  
Telephone: (202) 650-6073  
[Andres.Restrepo@sierraclub.org](mailto:Andres.Restrepo@sierraclub.org)  
JOANNE MARIE SPALDING  
Sierra Club  
2101 Webster Street, Ste. 1300  
Oakland, CA 94612  
Telephone: (415) 997-5725  
[Joanne.Spalding@sierraclub.org](mailto:Joanne.Spalding@sierraclub.org)  
*Counsel for Petitioner Sierra Club*

ANN BREWSTER WEEKS  
DARIN SCHROEDER  
Clean Air Task Force  
18 Tremont, Ste. 530  
Boston, MA 02108  
Telephone: (617) 624-0234  
[aweeks@catf.us](mailto:aweeks@catf.us)  
[dschroeder@catf.us](mailto:dschroeder@catf.us)  
*Counsel for Petitioner Earthworks*

DAVID DONIGER  
Natural Resources Defense Council  
1152 15th St. NW, Ste. 300  
Washington, DC 20005  
(202) 513-6256  
[ddoniger@nrdc.org](mailto:ddoniger@nrdc.org)  
MELEAH GEERTSMA  
Natural Resources Defense Council  
2 N. Wacker Drive, Ste. 1600  
Chicago, IL 60606  
Telephone: (312) 651-7904  
[mgeertsma@nrdc.org](mailto:mgeertsma@nrdc.org)  
*Counsel for Petitioner Natural  
Resources Defense Council*

TIM BALLO  
Earthjustice  
1625 Massachusetts Ave., NW  
Ste. 702  
Washington, DC 20036  
Telephone: (202) 667-4500  
[tballo@earthjustice.org](mailto:tballo@earthjustice.org)  
JOEL MINOR  
Earthjustice  
633 17th Street, Ste. 1600  
Denver, CO 80202  
Telephone: (303) 996-9628  
[jminor@earthjustice.org](mailto:jminor@earthjustice.org)  
*Counsel for Petitioners Sierra Club  
and Clean Air Council*

ADAM KRON  
Environmental Integrity Project  
1000 Vermont Ave. NW, Ste. 1100  
Washington, DC 20005  
Telephone: (202) 263-4451  
[akron@environmentalintegrity.org](mailto:akron@environmentalintegrity.org)  
*Counsel for Petitioner Environmental  
Integrity Project*



## TABLE OF CONTENTS

|                                                                                                                                                    |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| TABLE OF AUTHORITIES .....                                                                                                                         | iv |
| INTRODUCTION .....                                                                                                                                 | 1  |
| ARGUMENT .....                                                                                                                                     | 2  |
| I. The Challenged Stay Is a Final Agency Action Reviewable by this Court .....                                                                     | 2  |
| II. The Administrator Conflates the Statutory Terms “Reconsideration”<br>and “Revision,” Ignoring Congressional Limits on His Stay Authority. .... | 3  |
| III. Petitioners Are Likely to Succeed on the Merits Because the<br>Challenged Stay Exceeded EPA’s Narrow Stay Authority .....                     | 5  |
| IV. Petitioners Are Being Irreparably Harmed.....                                                                                                  | 11 |
| V. The Public Interest Decisively Supports a Judicial Stay of the<br>Challenged Stay .....                                                         | 15 |
| CONCLUSION .....                                                                                                                                   | 17 |
| CERTIFICATE OF COMPLIANCE                                                                                                                          |    |
| REPLY ATTACHMENTS                                                                                                                                  |    |
| CERTIFICATE OF SERVICE                                                                                                                             |    |

## TABLE OF AUTHORITIES

### Cases:

|                                                                                                |      |
|------------------------------------------------------------------------------------------------|------|
| <i>Bennett v. Spear</i> ,<br>520 U.S. 154 (1997).....                                          | 2    |
| <i>Ctr. for Biological Diversity v. EPA</i> ,<br>722 F.3d 401 (D.C. Cir. 2013).....            | 11   |
| <i>Nat’l Ass’n of Clean Water Agencies v. EPA</i> ,<br>734 F.3d 1115 (D.C. Cir. 2013).....     | 5    |
| <i>*Ne. Maryland Waste Disposal Auth. v. EPA</i> ,<br>358 F.3d 936 (D.C. Cir. 2004).....       | 5    |
| <i>North Carolina v. EPA</i> ,<br>531 F.3d 896 (D.C. Cir. 2008).....                           | 6    |
| <i>Portland Cement Ass’n v. EPA</i> ,<br>665 F.3d 177 (D.C. Cir. 2011).....                    | 6    |
| <i>*Sec. &amp; Exch. Comm’n v. Chenery Corp.</i> ,<br>318 U.S. 80 (1943).....                  | 4, 7 |
| <i>Small Refiner Lead Phase-Down Task Force v. EPA</i> ,<br>705 F.2d 506 (D.C. Cir. 1983)..... | 6    |
| <i>Weinberger v. Romero-Barcelo</i> ,<br>456 U.S. 305 (1982).....                              | 16   |

### Statutes:

|                              |       |
|------------------------------|-------|
| 42 U.S.C. § 7409 .....       | 6, 15 |
| 42 U.S.C. § 7411 .....       | 15    |
| 42 U.S.C. § 7521 .....       | 6     |
| 42 U.S.C. § 7607(b)(1) ..... | 1, 2  |

|                                  |         |
|----------------------------------|---------|
| *42 U.S.C. § 7607(d)(1) .....    | 3       |
| 42 U.S.C. § 7607(d)(2)-(6) ..... | 3       |
| *42 U.S.C. § 7607(d)(7) .....    | 1, 4, 5 |
| 42 U.S.C. § 7607(d)(9) .....     | 16      |

Regulations and Other Administrative Materials:

|                                            |          |
|--------------------------------------------|----------|
| 40 C.F.R. § 60.5365a .....                 | 8, 10    |
| 80 Fed. Reg. 56,593 (Sept. 18, 2015) ..... | 8        |
| 81 Fed. Reg. 35,824 (June 3, 2016) .....   | 7, 8, 11 |
| 82 Fed. Reg. 25,730 (June 5, 2017) .....   | 10       |
| 82 Fed. Reg. 27,645 (June 16, 2017) .....  | 2, 15    |
| 30 Tex. Admin. Code. § 116.620 .....       | 14       |

Other Materials:

|                                   |   |
|-----------------------------------|---|
| H.R. Rep. No. 95-294 (1977) ..... | 6 |
|-----------------------------------|---|

\*Authorities chiefly relied upon are marked with an asterisk.

## INTRODUCTION

Flouting clear textual limits on his authority, Administrator Pruitt's principal argument is that he can grant reconsideration, and corresponding stays, whenever he chooses. That is not what the statute says. The statute prescribes a carefully circumscribed scope for a narrow proceeding for "reconsideration" (with authority to impose a limited stay), which the Administrator conflates with EPA's broad rule "revision" authority (without authority to impose a stay). What EPA has done here does not come close to meeting the statutory standards for reconsideration.

Administrator Pruitt laments that without the stay, oil and gas companies may have to comply with a regulation that he contemplates changing. That decision is not his to make. Congress explicitly decided that promulgated air pollution standards should take effect even during judicial review or administrative reconsideration, which "shall not postpone the effectiveness of the rule" notwithstanding the possibility that the rule might be invalidated or changed. 42 U.S.C. § 7607(d)(7)(B); *see id.* § 7607(b)(1). The Act authorizes a single exception—a one-time, three-month stay—only on specific conditions not met here.

While deeply troubled about compliance expenditures by oil and gas companies, Administrator Pruitt issued the stay without even bothering to consider the serious and irreversible harms that befall Petitioners' members and the broader

public every day that the stay continues. This lapse is especially egregious because of his subsequent acknowledgement, in a proposal to extend the stay for *two more years*, that delaying compliance could “have a disproportionate effect on children.” 82 Fed. Reg. 27,645, 27,650 (June 16, 2017) (Reply Attach. 7). This Court should vacate the unlawful initial stay at issue here.

## ARGUMENT

### **I. The Challenged Stay Is a Final Agency Action Reviewable by this Court.**

The challenged stay is a distinct, reviewable “final action taken[] by the Administrator.” 42 U.S.C. § 7607(b)(1). By lifting the air pollution compliance obligations of regulated sources, the stay marks the consummation of EPA’s decision-making process and has immediate legal consequences. *See Bennett v. Spear*, 520 U.S. 154, 177-78 (1997). Nor can Petitioners’ challenge to the stay be deflected as a collateral attack on the grant of reconsideration. The statute makes a valid reconsideration proceeding a prerequisite for a stay; Petitioners’ challenge to the stay turns on EPA’s failure to satisfy that statutory requirement. The Administrator and Industry cite no case for the proposition that a final agency action is unreviewable because it was taken in the course of an ongoing proceeding. This Court should reject an interpretation that would render such stays unreviewable despite their final, real-world consequences.

## **II. The Administrator Conflates the Statutory Terms “Reconsideration” and “Revision,” Ignoring Congressional Limits on His Stay Authority.**

Administrator Pruitt’s argument for broad stay authority (at 9-15) rests on conflating two distinct statutory terms: “revision” and “reconsideration.” Section 307(d)(1) uses the term “revision” to describe a rulemaking to change an existing standard. 42 U.S.C. § 7607(d)(1) (identifying the “promulgation or revision” of 19 types of standards). Paragraphs (2) through (6) of subsection 307(d) specify the rulemaking procedures governing “revision” of a standard, and nowhere grant authority for EPA to stay an existing rule during a rulemaking to revise it. *Id.* § 7607(d)(2)-(6).

“Reconsideration,” as used in section 307(d)(7)(B), is a much narrower term. It is the term for the exhaustion procedure Congress made available when—and only when—a party demonstrates that it was unable to comment on an issue of central relevance during the normal comment period. Section 307(d)(7)(B)’s authority for a one-time, three-month stay is expressly limited to a “reconsideration” and does not extend to a “revision.” Where, as here, the threshold requirements for reconsideration are not present, EPA lacks authority to issue a stay. The Administrator cannot bootstrap his way to stay authority by mischaracterizing a revision as a reconsideration.

The Administrator asserts (at 10-12) that the statute allows for *two kinds* of reconsideration—mandatory when the conditions specified in section 307(d)(7)(B) are met and discretionary whenever EPA wishes—and that the agency may impose a three-month stay “whether or not reconsideration was mandatory.” This post-hoc rationalization, which does not appear in the Federal Register notice, cannot be considered, *Sec. & Exch. Comm’n v. Chenery Corp.*, 318 U.S. 80, 94–95 (1943), much less deferred to. Further, this reading would obliterate Congress’s distinction between “revision” and “reconsideration.” If Congress intended “reconsideration” to swallow up all “revisions,” it would not have used separate terms and so carefully delineated the limits on reconsideration. It also would not have expressly tethered the stay authority to “*such* reconsideration,” 42 U.S.C. § 7607(d)(7)(B) (emphasis added)—*i.e.*, the specific reconsideration procedure carefully outlined in that provision. EPA’s post-hoc statutory interpretations are contrary to the statute’s plain meaning and unreasonable.

Petitioners readily concede that EPA may consider changing an existing standard through a “revision” rulemaking under section 307(d)(2)-(6). But that “revision” is not “reconsideration” as that term is used in section 307(d)(7)(B), and that subparagraph’s stay authority does not extend to revisions.

### **III. Petitioners Are Likely to Succeed on the Merits Because the Challenged Stay Exceeded EPA's Narrow Stay Authority.**

Administrator Pruitt asserts (at 15-17) that this Court must grant broad deference to EPA, but whether parties had adequate notice to raise their objections during the comment period is not a question within the agency's special expertise.<sup>1</sup> Rather, adequacy-of-notice questions are quintessentially ones that courts decide, giving limited deference to agency views.

EPA is incorrect (at 16) that the statute's requirement that the showings of inadequate notice and central relevance be made "to the Administrator," 42 U.S.C. § 7607(d)(7)(B), entitles the Administrator to broad deference. Where Congress wanted courts to give extra deference to the Administrator's "judgment," it said so

---

<sup>1</sup> EPA confusingly suggests (at 16 n.7) that "many of Petitioners' cases" address "whether EPA provided adequate notice[]" rather than the "separate issue" of "whether reconsideration was allowable, mandated, or even requested." That is because "reconsideration" is permitted only when parties show lack of notice on a central issue; any other proceeding to change a rule is a "revision." Adequacy of notice is what determines whether an issue was "impracticable to raise" under section 307(d)(7)(B). *See, e.g., Nat'l Ass'n of Clean Water Agencies v. EPA*, 734 F.3d 1115, 1158 (D.C. Cir. 2013) ("Because Sierra Club was on notice that EPA was considering [an issue], we conclude that it was practicable for Sierra Club to comment" on that issue.); *Ne. Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936, 953 (D.C. Cir. 2004) ("As we have concluded that" the final rule was a "logical outgrowth of the proposed rule," "there is no ground for holding that a reconsideration proceeding was required.").



expressly. *E.g., id.* §§ 7409(b); 7521(a)(1).<sup>2</sup> The absence of such language here is significant and supports Petitioners’ argument for limited deference.

Limited deference is further evident in this Court’s decisions reviewing EPA determinations under section 307(d)(7)(B). In *Portland Cement Association v. EPA*, after extensively examining the facts relevant to notice without a hint of deference to EPA, and despite finding it “a very close question,” this Court rejected EPA’s conclusion that the party could have reasonably anticipated the final rule. 665 F.3d 177, 185-86 (D.C. Cir. 2011). Likewise, in *Small Refiner Lead Phase-Down Task Force v. EPA*, this Court delved into the details of whether EPA had given adequate notice. 705 F.2d 506, 546-550 (D.C. Cir. 1983). The Court ultimately found that EPA had adequately noticed one requirement but not another, without any indication that EPA’s view on the matter was an important factor. *Id.* at 521, 547-50 (“[T]here is less to § 307(d)’s requirements for procedural reversal than meets the eye.”); *see also North Carolina v. EPA*, 531 F.3d 896, 926-28 (D.C. Cir. 2008) (similar).

---

<sup>2</sup> The 1977 House Report explained: “[T]he committee included the words ‘in the judgment of the Administrator’ or ‘in his judgment’” in specific sections “to emphasize the necessarily judgmental element in the task of predicting future health risks ... and to confer upon the Administrator the requisite authority to exercise such judgment.” H.R. Rep. No. 95-294 at 51 (1977).

Limited deference on these notice questions makes sense. EPA has no greater expertise than this Court in determining whether a certain issue was “impracticable to raise” during the comment period. To the contrary, this Court has a fully-developed body of case law for determining when a final rule is a “logical outgrowth” of the proposal, and thus whether a party had a practicable opportunity to raise concerns.

Low-Production Wells. The Administrator does not attempt to rebut the ample record evidence that EPA solicited and received comments on all aspects of the question of whether to exempt low-production wells from leak detection and repair requirements. Pet’rs Mot. 14-17 (“Mot.”). Instead, he offers (at 17-18) a new justification that appears nowhere in the Federal Register notice: a purported “potential inconsistency” between the basis for the inclusion of low-production wells and the definition of a “modification” at a well site. EPA may not rely on this post-hoc rationale. *Chenery Corp.*, 318 U.S. at 94-95.

Moreover, the “potential inconsistency” is illusory. The 2016 Rule acknowledges that a well site modification (*i.e.*, an additional fracking operation at an existing well site) leads to increased emissions due to both the addition of equipment and additional gas production passing through existing leaking components. 81 Fed. Reg. 35,824, 35,881 (June 3, 2016) (Reply Attach. 12). As EPA explained: “it is not uncommon that an increase in production [at a modified

well site] would require *additional equipment and, therefore, additional fugitive emission components....*” *Id.* (emphasis added). Thus, the 2016 Rule treated modified well sites and low-production wells consistently, recognizing that at both, emission leaks are associated with the number of leaky components, not simply production levels.<sup>3</sup>

Even if Administrator Pruitt’s claimed inconsistency had merit, he wrongly asserts that it was impracticable to have commented on the issue. The final rule included the same definition of “modification” as the proposal and was based on the same reasoning.<sup>4</sup> The proposal also explicitly sought comment on all issues associated with emissions at low-production wells. 80 Fed. Reg. 56,593, 56,639 (Sept. 18, 2015). Commenters could—and did—comment on the underlying rationales for both aspects of the leak detection requirements in the 2016 Rule.

---

<sup>3</sup> Other provisions of the 2016 Rule confirm this consistency. For example, the 2016 Rule *exempts* well sites that consist only of wellheads with no components or equipment, regardless of their production levels. *See* 40 C.F.R. § 60.5365a(i)(2).

<sup>4</sup> The proposed and final rules both explained that modifying wells would increase emissions both because of additional equipment and increased production. *Compare* 80 Fed. Reg. at 56,614 (Reply Attach. 15) (“When a new well is added or a well is fractured or refractured, there is an increase in emissions ... because of the addition of ... equipment ... and increased production....”) *with* 81 Fed. Reg. at 35,881 (Reply Attach. 12) (“[T]he addition of a new well or the hydraulically fracturing or refracturing of an existing well will increase emissions” because “production from these wells ... generate[s] additional emissions,” some of which “will pass through leaking fugitive emission components .... Further, it is not uncommon that an increase in production would require additional equipment.”).

*E.g.*, Reply Attach. 44, 46. They could have raised the alleged inconsistency on which the Administrator now hangs his hat, but they did not.

*Alternative Compliance.* Because no party sought reconsideration of this issue, Mot. 17-18, Administrator Pruitt has no authority to rely on it as a basis for the stay. Contrary to EPA's assertion (at 20), TXOGA did not seek reconsideration on this issue, but rather "adopt[ed] the API petition," which classified alternative compliance as an "other issue," distinct from those on which API sought reconsideration. Mot. 17.

Even if the alternative compliance issue were properly presented, it provides no basis for a stay. EPA sought, and parties submitted, comments on this issue. Mot. 18-20. Indeed, the final rule adopted an approval application process in response to API's comments, which asked EPA for a "streamlined approval process" to demonstrate satisfaction with the criteria for alternative monitoring techniques. Pet. Attach. 193-97.

Further, the complained-of details of the application procedure are not of "central relevance." EPA's standard requiring leak detection and repair (known as the "best system of emission reduction") was fully supported based on an analysis of the costs of control and emissions reductions to be achieved, without relying on the existence or use of the alternative compliance process relieving regulated entities based on equivalent state or voluntary programs. Reply Attach. 21.

Contrary to the Administrator's current assertion (at 21) that this process "determine[s] the universe of affected facilities," the alternative compliance process was merely a voluntary option for facilities subject to the Rule. *See* 40 C.F.R. § 60.5365a(i), (j) (defining affected facilities). Notably, none of the reconsideration petitions sought a stay in connection with this issue.

The Administrator has also failed to establish that any affected facilities are depending on alternative means to comply, or that the current application process (already in place for a year) has deterred them from doing so. As the industry administrative petitioners themselves suggested, EPA could have addressed their issues (*e.g.*, whether one entity may apply for approval on behalf of multiple firms) through guidance rather than further rulemaking, and without staying the entire program. *See* Pet. Attach. 106.

Overbreadth. Administrator Pruitt asserts (at 24-25) that his stay of the leak detection and repair requirements for *all* new and modified oil and gas facilities is "limited in scope to the specific issues to which [EPA] has granted reconsideration." That is not true: the notice identifies the specific issue for reconsideration as "[t]he applicability of the fugitive emissions requirements to low production well sites," 82 Fed. Reg. 25,730, 25,731 (June 5, 2017), yet finalizes a stay of leak detection requirements for *all* affected well sites regardless of production levels, *and* for compressor stations too. *Id.* at 25,732-33.

The Administrator fails to explain why he did not limit the stay to only those wells that would have been covered by the original proposed exemption—wells producing less than 15 barrels of oil equivalent per day, 81 Fed. Reg. at 35,856, as requested by IPAA, Pet. Attach. 138-40. *Cf. Ctr. for Biological Diversity v. EPA*, 722 F.3d 401, 410-11 (D.C. Cir. 2013) (because agency must adopt “the narrowest feasible exemption,” broad exemption was arbitrary and capricious where more moderate option was not explored). Similarly, Administrator Pruitt overbroadly stayed leak detection and repair in *all* states, not just states with their own arguably equivalent programs, despite the fact that API’s petition only raised concerns with respect to alternative compliance via state programs. *See* Pet. Attach. 105-106.

As EPA concedes (at 25), its stay must be “proportionate” to the issues under reconsideration. A proportionate stay here would have, at a minimum, left the leak detection and repair requirements in effect for wells emitting more than 15 barrels of oil equivalent per day in states without their own leak detection and repair programs.

#### **IV. Petitioners Are Being Irreparably Harmed.**

Administrator Pruitt and Industry do not dispute the health and environmental harms from additional emissions of volatile organic compounds (“VOC”), hazardous air pollutants, and methane. *See* Mot. 27-29. Nor do they challenge Petitioners’ assessment that the Administrator’s 90-day stay will cause

additional, irreversible emissions of smog-forming and hazardous air pollution in areas already overburdened by unhealthy air quality. Pet. Attach. 64, 68-72 (¶¶ 7, 14-15, 18-21). They further do not question that Petitioners have members who live near affected sources, or in nonattainment areas where these sources contribute to poor air quality, and who will be harmed by these emissions during the pendency of the stay. *E.g.*, Pet. Attach. 247-48, 251-52 (¶¶ 3-4, 7, 17), 262 (¶ 12). These unchallenged assertions alone suffice to demonstrate irreparable harm.<sup>5</sup>

Industry's (at 11-12) and the Administrator's (at 27) marginal critiques—that some emissions may occur outside the stay period and that Petitioners should have excluded emissions from Texas wells—do not withstand even minimal scrutiny. More fundamentally, both ignore the many ways Dr. Lyon's analysis conservatively understates the true impacts of EPA's 90-day stay. *E.g.*, Pet. Attach. 39-40 (¶ 13) (dataset does not include all wells drilled or completed during the last several months or any that will be drilled or completed during the stay).

Industry fails to acknowledge that Dr. Lyon provided a conservative lower-bound estimate of emissions *during the 90-day period*. Pet. Attach. 45-47 (¶¶ 19-21 & tbl. 3) (identifying 90-day emission estimates and explaining why these lower values actually understate 90-day emissions). His declaration also includes higher

---

<sup>5</sup> The emissions from pneumatic pumps due to the stay only increase the harms faced by Petitioners' members. Further, in addition to the judicial stay, Petitioners have requested summary vacatur on all issues.

estimates based on annual emission reductions because field evidence shows that the *first* leak detection survey—the one foregone by the stay—can result in emissions reductions similar to those EPA estimates occur over the course of the year. *Id.*<sup>6</sup> Both Dr. Lyon’s conservative lower-bound estimate and higher estimate show substantial and irreparable harm during the 90-day stay. These harms will only be worsened by EPA’s proposals to extend the stay for more than two additional years. Reply Attach. 2, 23.

Administrator Pruitt’s comparison (at 7, 28) of the increased emission from the stay to the massive total emissions of air pollution from the sector is both irrelevant and disingenuous. It is irrelevant because it does not reduce the burden felt by Petitioners’ members who live near sources whose emissions would be abated but for the unlawful stay, especially those in nonattainment areas where *any* additional VOC emissions may increase local ozone concentrations. And it is disingenuous because those massive emissions are the result of EPA’s own failure to regulate *existing* oil and gas wells.

Industry attempts to further discount these irreparable harms by asserting (at 12) that the Court could block only the remaining “60-70 days” of Administrator Pruitt’s stay. Petitioners cannot be faulted for that. Despite informing industry of the impending stay in April, the Administrator did not publish the final stay—

---

<sup>6</sup> For the same reason, EPA’s allegation (at 28 n.9) that Petitioners’ brief “*quadruples* the emissions” is meritless.



thereby allowing Petitioners to file suit—until two days *after* the June 3, 2017, compliance deadline. In any event, Industry’s effort to slice EPA’s intended more-than-two-year stay into smaller parts—each alleged to be too short to worry about—does nothing to allay the irreparable harm that Petitioners members will actually experience.

Administrator Pruitt’s claim that Dr. Lyon ignored Texas’s supposed requirements fares no better. Like EPA’s analysis of the impacts of the 2016 Rule, Dr. Lyon’s analysis conservatively excluded emissions from sources subject to comparable state programs. And like EPA, Dr. Lyon did not exclude sources in Texas. Reply Attach. 32 (omitting Texas from list of “states subject to fugitive emissions requirements”); Pet. Attach. 38-39 (¶ 11). Dr. Lyon’s treatment of Texas was entirely reasonable because the scope of Texas’s “program” is not comparable to EPA’s standards: it *does not address methane emissions at all*, makes numerous exemptions absent from the 2016 Rule, and applies only to the very largest production sites. Resp. Attach. 148-54 (requirements apply only to “fugitive components with uncontrolled potential to emit of  $\geq 10$  [tons per year] VOC”); *see* 30 Tex. Admin. Code. § 116.620(a)(10), (c)(2). It would therefore have been unreasonable for Dr. Lyon to treat Texas sources as though their emissions were already controlled. Administrator Pruitt’s newfound voucher (at

27) for the quality of the Texas program is the only thing that suffers from “internal[] inconsisten[cies].”

Finally, Administrator Pruitt suggests (at 28-29) that Dr. Lyon “neglect[ed] to address” protections provided by the National Ambient Air Quality Standards. But those standards do nothing to prevent or mitigate the emissions occurring because of the Administrator’s unlawful stay, nor the immediate and irreparable harm Petitioners’ members face as a result. The Administrator shows an utter disregard for the Clean Air Act, which provides for *both* the ambient air quality standards *and* new source performance standards, working in tandem, to reduce dangerous air pollution from major industrial sources. 42 U.S.C. §§ 7409, 7411; *see* Reply Attach. 35 (EPA’s statement that the 2016 Rule will help attain ambient standards). His reliance on the ambient standards to prevent Petitioners’ near-term irreparable injuries is particularly remarkable given his recent decision to delay implementation of *those requirements* too. Reply Attach. 39.

**V. The Public Interest Decisively Supports a Judicial Stay of the Challenged Stay.**

In addition to Petitioners’ members, countless members of the public are similarly situated, face imminent and irreparable harms, and would benefit from Petitioners’ requested relief. EPA itself has conceded that delaying these provisions disproportionately harms children. 82 Fed. Reg. at 27,650 (“EPA believes that the environmental health or safety risk addressed by this action may

have a disproportionate effect on children.”) (Reply Attach. 7). These and other harms become even more acute during the summer ozone season—the very months when the Administrator’s stay will permit additional pollution. Pet. Attach. 64, 68-70 (¶¶ 7, 14-15, 17). The concrete and broad-based negative “public consequences” that will result from allowing the Administrator’s stay to remain in place strongly weigh in favor of granting Petitioners’ requested relief. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982).<sup>7</sup>

Respondents offer two competing considerations, neither compelling. Administrator Pruitt notes (at 31) that the industry would face millions of dollars in compliance costs across all affected wells, but he omits the fact that these same wells produce *billions* of dollars of revenue annually. Pet. Attach. 326 (¶ 12). As Petitioners showed, these compliance costs represent just a fraction of a percent of industry revenues and do not outweigh the severe health harms to Petitioners’ members and other Americans. Mot. 32.

Administrator Pruitt and Industry further profess concern about the fairness of requiring companies to comply with the 2016 Rule while EPA mulls changing it, and about the fairness of voiding the stay now that some companies have

---

<sup>7</sup> Both Administrator Pruitt and Industry argue at length that EPA did not need to meet the traditional four-factor test to issue its stay. Even if that is true in a strict sense, Administrator Pruitt’s complete disregard for the harms caused by the stay and his failure to assess the public interest in regulatory safeguards render his decision arbitrary and capricious. 42 U.S.C. § 7607(d)(9)(A).

“relied” on it. Industry Br. 14. As already noted (at 1), however, Congress expressly decided that Clean Air Act standards should go into effect even when a party is seeking administrative or judicial review. Further, even though the 2016 Rule provided (at industry’s request, Pet. Attach. 240-41) a year’s advance notice of the compliance deadline, none of the 2016 Rule’s challengers sought a judicial stay or even a schedule for briefing their challenge. And given Industry’s prior assertions that it needed a year to come into compliance, companies should have been well on their way by the time they received Administrator Pruitt’s April 18 letter. Moreover, the leak detection and repair standards do not require permanent installation of on-site technologies, and, as EPA recognized, Reply Attach. 36-37, third-party companies offer these leak detection services at modest costs—all of which underscores that allowing the standards to take effect as planned would result in minimal disruptions.

The public interest weighs strongly in favor of granting Petitioners’ requested relief.

### **CONCLUSION**

The Court should stay or, in the alternative, summarily vacate EPA’s unlawful action.

DATED: June 20, 2017

Respectfully submitted,

/s/ Susannah L. Weaver

SUSANNAH L. WEAVER  
SEAN H. DONAHUE  
Donahue & Goldberg, LLP  
1111 14th Street, NW  
Ste. 510A  
Washington, DC 20005  
Telephone: (202) 569-3818  
Facsimile: (202) 289-8009  
[susannah@donahuegoldberg.com](mailto:susannah@donahuegoldberg.com)  
*Counsel for Petitioner Environmental  
Defense Fund*

PETER ZALZAL  
ALICE HENDERSON  
VICKIE PATTON  
Environmental Defense Fund  
2060 Broadway, Ste. 300  
Boulder, CO 80302  
Telephone: (303) 447-7214  
[pzalzal@edf.org](mailto:pzalzal@edf.org)  
TOMÁS CARBONELL  
Environmental Defense Fund  
1875 Connecticut Ave., 6th Floor  
Washington, D.C., 20009  
Telephone: (202) 572-3610  
[tcarbonell@edf.org](mailto:tcarbonell@edf.org)  
*Counsel for Petitioner Environmental  
Defense Fund*

DAVID DONIGER  
Natural Resources Defense Council  
1152 15th St. NW, Ste. 300  
Washington, DC 20005  
(202) 513-6256  
[ddoniger@nrdc.org](mailto:ddoniger@nrdc.org)  
MELEAH GEERTSMA  
Natural Resources Defense Council  
2 N. Wacker Drive, Ste. 1600  
Chicago, IL 60606  
Telephone: (312) 651-7904  
[mgeertsma@nrdc.org](mailto:mgeertsma@nrdc.org)  
*Counsel for Petitioner Natural  
Resources Defense Council*

ANDRES RESTREPO  
Sierra Club  
50 F St., NW, 8th Floor  
Washington, DC 20001  
Telephone: (202) 650-6073  
[Andres.Restrepo@sierraclub.org](mailto:Andres.Restrepo@sierraclub.org)  
JOANNE MARIE SPALDING  
Sierra Club  
2101 Webster Street, Ste. 1300  
Oakland, CA 94612  
Telephone: (415) 997-5725  
[Joanne.Spalding@sierraclub.org](mailto:Joanne.Spalding@sierraclub.org)  
*Counsel for Petitioner Sierra Club*

ANN BREWSTER WEEKS  
DARIN SCHROEDER  
Clean Air Task Force  
18 Tremont, Ste. 530  
Boston, MA 02108  
Telephone: (617) 624-0234  
[aweeks@catf.us](mailto:aweeks@catf.us)  
[dschroeder@catf.us](mailto:dschroeder@catf.us)

*Counsel for Petitioner Earthworks*

ADAM KRON  
Environmental Integrity Project  
1000 Vermont Ave. NW, Ste. 1100  
Washington, DC 20005  
Telephone: (202) 263-4451  
[akron@environmentalintegrity.org](mailto:akron@environmentalintegrity.org)  
*Counsel for Petitioner Environmental  
Integrity Project*

TIM BALLO  
Earthjustice  
1625 Massachusetts Ave., NW  
Ste. 702  
Washington, DC 20036  
Telephone: (202) 667-4500  
[tballo@earthjustice.org](mailto:tballo@earthjustice.org)  
JOEL MINOR  
Earthjustice  
633 17th Street, Ste. 1600  
Denver, CO 80202  
Telephone: (303) 996-9628  
[jminor@earthjustice.org](mailto:jminor@earthjustice.org)  
*Counsel for Petitioners Sierra Club  
and Clean Air Council*

**CERTIFICATE OF COMPLIANCE**

I certify that the foregoing reply was printed in a proportionally spaced font of 14 points and that, according to the word-count program in Microsoft Word 2016, it contains 3,897 words.

DATED: June 20, 2017

/s/ Susannah L. Weaver  
Susannah L. Weaver

**REPLY TO RESPONSES IN OPPOSITION TO  
EMERGENCY MOTION FOR A STAY OR,  
IN THE ALTERNATIVE, SUMMARY VACATUR**

---

**ATTACHMENTS**

| <b>Attach.<br/>No.</b> | <b>Title</b>                                                                                                                                                                                                             | <b>Page</b> |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>1</b>               | U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: <b>Stay of Certain Requirements, Proposed Rule</b> , 82 Fed. Reg. 27,645 (June 16, 2017)                          | 1           |
| <b>2</b>               | U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, <b>Final Rule</b> , 81 Fed. Reg. 35,824 (June 3, 2016) (excerpts)                                                 | 10          |
| <b>3</b>               | U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New and Modified Sources, <b>Proposed Rule</b> , 80 Fed. Reg. 56,593 (Sept. 18, 2015) (excerpts)                                                            | 13          |
| <b>4</b>               | U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, <b>Background Technical Support Document</b> for the Final New Source Performance Standards (May 2016) (excerpts) | 18          |
| <b>5</b>               | U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: <b>Three Month Stay of Certain Requirements, Proposed Rule</b> , 82 Fed. Reg. 27,641 (June 16, 2017)              | 22          |
| <b>6</b>               | U.S. EPA, <b>Regulatory Impact Analysis</b> of the Final Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources (May 2016) (excerpts)                                               | 28          |
| <b>7</b>               | <b>Letter from E. Scott Pruitt</b> , Administrator, U.S. EPA, to Doug Ducey, Governor, Arizona (June 6, 2017)                                                                                                            | 38          |
| <b>8</b>               | <b>API, Comments on the Proposed Rulemaking</b> – Standards of Performance for New Stationary Sources: Oil and Natural Gas Production and Natural Gas Transmission and Distribution (Dec. 4, 2015) (excerpts)            | 41          |



# Attachment 1

U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: **Stay of Certain Requirements, Proposed Rule**, 82 Fed. Reg. 27,645 (June 16, 2017)

c. Adding paragraph (b)(13); and  
d. Staying paragraphs (c)(15) through (17) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The revision and addition read as follows:

**§ 60.5420a What are my notification, reporting, and recordkeeping requirements?**

\* \* \* \* \*

(b) *Reporting requirements.* You must submit annual reports containing the information specified in paragraphs (b)(1) through (8) and (12) of this section and performance test reports as specified in paragraph (b)(9) or (10) of this section, if applicable, except as provided in paragraph (b)(13) of this section. You must submit annual reports following the procedure specified in paragraph (b)(11) of this section. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to § 60.5410a. Subsequent annual reports are due no later than same date each year as the initial annual report. If you own or operate more than one affected facility, you may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) through (8) of this section, except as provided in paragraph (b)(13) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. You may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

\* \* \* \* \*

(13) The collection of fugitive emissions components at a well site (as defined in § 60.5430a), the collection of fugitive emissions components at a compressor station (as defined in § 60.5430a), and pneumatic pump affected facilities at a well site (as defined in § 60.5365a(h)(2)) are not subject to the requirements of paragraph (b)(1) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

[FR Doc. 2017-12473 Filed 6-15-17; 8:45 am]

BILLING CODE 6560-50-P

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2010-0505; FRL-9963-36-OAR]

RIN 2060-AT59

**Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to stay for two years certain requirements that are contained within the Final Rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources,” published in the **Federal Register** on June 3, 2016 (2016 Rule). On June 5, 2017, the EPA published a notice that it stayed for three months the; fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification of closed vent systems by a professional engineer in accordance with the Clean Air Act (CAA). The EPA has granted reconsideration based on specific objections to these requirements. The proposed stay discussed in this action, which follows the three-month stay, would provide the EPA sufficient time to propose, take public comment, and issue a final action on the issues concerning the specific requirements on which EPA has granted reconsideration. During this time, the EPA also plans to complete its reconsideration process for all remaining issues raised in these reconsideration petitions regarding fugitive emissions, pneumatic pumps, and certification by professional engineer requirements. The EPA acknowledges that the administrative reconsideration petitions include additional issues regarding these three requirements other than the issues for which we specifically have granted reconsideration. In addition, since the publication of the 2016 Rule, the EPA has received numerous questions relative to the implementation of these three requirements. During the reconsideration proceeding, the EPA intends to look broadly at the entire 2016 Rule. The EPA believes that addressing all of these issues at the same time would provide clarity and certainty for the public and the regulated community with regard to these requirements. The EPA is seeking

comment pertaining to this stay and its duration and impact. The EPA is not taking comment at this time on substantive issues concerning these requirements, or on any of the other provisions subject to the reconsideration.

**DATES:** Comments must be received on or before July 17, 2017. If a hearing is requested on this proposed rule, written comments must be received on or before August 9, 2017.

**Public Hearing.** A public hearing will be held, if requested by June 21, 2017, to accept oral comments on this proposed action. If a hearing is requested, it will be held at the EPA’s Washington, DC campus located at 1201 Constitution Avenue NW., Washington, DC. The hearing, if requested, will begin at 9 a.m. (local time) and will conclude at 4 p.m. (local time) on July 10, 2017. To request a hearing, to register to speak at a hearing, or to inquire if a hearing will be held, please contact Aimee St. Clair at (919) 541-1063 or by email at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov).

Any updates made to any aspect of the hearing, including whether or not a hearing will be held, will be posted online at <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/actions-and-notices-about-oil-and-natural-gas#regactions>. In addition, you may contact Aimee St. Clair at (919) 541-1063 or email at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov) with public hearing inquiries. The EPA does not intend to publish a notice in the **Federal Register** announcing any such updates. Please go to <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/actions-and-notices-about-oil-and-natural-gas#regactions> for more information on the public hearing.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2010-0505, to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment

Reply Attach. 2

ED\_002691\_00000143-00028

contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** Mr. Peter Tsirigotis, Sector Policies and Programs Division (D205-01), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (888) 627-7764; email address: [airaction@epa.gov](mailto:airaction@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Background**

On June 3, 2016, the EPA published a final rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule,” at 81 FR 35824 (“2016 Rule”). The 2016 Rule establishes new source performance standards (NSPS) for greenhouse gas emissions and volatile organic compound (VOC) emissions from the oil and natural gas sector. This rule addresses, among other things, fugitive emissions at well sites and compressor stations (“fugitive emissions requirements”) and emissions from pneumatic pumps. In addition, for a number of affected facilities (*i.e.*, centrifugal compressors, reciprocating compressors, pneumatic pumps, and storage vessels), the rule requires certification by a professional engineer of the closed vent system design and capacity, as well as any technical infeasibility determination relative to controlling pneumatic pumps at well sites. For further information on the 2016 Rule, see 81 FR 35824 (June 3, 2016) and associated Docket ID No. EPA-HQ-OAR-2010-0505.

On August 2, 2016, a number of interested parties submitted administrative petitions to the EPA seeking reconsideration of various aspects of the 2016 Rule pursuant to section 307(d)(7)(B) of the CAA (42 U.S.C. 7607(d)(7)(B)).<sup>1</sup> Those petitions include numerous objections relative to the fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification by professional engineer.

In accordance with section 307(d)(7)(B) of the CAA, the Administrator shall convene a reconsideration proceeding if, in the

Administrator’s judgment, the petitioner raises an objection to a rule that was impracticable to raise during the comment period or if the grounds for the objection arose after the comment period but within the period for judicial review, and the objection is of central relevance to the outcome of the rule. The Administrator may stay the effectiveness of the rule for up to three months during such reconsideration.

In a letter dated April 18, 2017, based on the criteria in CAA section 307(d)(7)(B), the Administrator convened a proceeding for reconsideration of the following objections relative to the fugitive emissions requirements: (1) The process and criteria for requesting and receiving approval for the use of an alternative means of emission limitations (AMEL) for purposes of compliance with the fugitive emissions requirements in the 2016 Rule and (2) the applicability of the fugitive emissions requirements to low production well sites.<sup>2</sup>

After issuing the April 18, 2017, letter, the EPA identified objections to two other aspects of the 2016 Rule that meet the criteria for reconsideration under section 307(d)(7)(B) of the CAA. These objections relate to (1) the requirements for certification of closed vent system by professional engineer (“PE certification requirement”); and (2) the well site pneumatic pump standards. As part of the administrative reconsideration proceeding, the EPA will prepare a notice of proposed rulemaking that will provide the petitioners and the public an opportunity to comment on the fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification by professional engineer, and the issues associated with these requirements.

On June 5, 2017, the EPA published a notice that it stayed the fugitive emissions requirements, the well site pneumatic pumps requirements, and the requirements for certification of closed vent system by professional engineer for three months pursuant to section 307(d)(7)(B) of the CAA. This stay is effective from June 2, 2017, to August 31, 2017. When we have issued similar stays in the past, it has often been our practice to also propose a longer stay through a rulemaking process. See, *e.g.*, 74 FR 36427 (July 23, 2009). In this case, for the reasons stated below, we propose to stay these requirements in the 2016 Rule for two years.

**II. The Proposed Action**

The EPA is proposing to stay the fugitive emissions requirements, the well site pneumatic pump standards, and the requirements for certification of closed vent system by professional engineer in the 2016 Rule until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER].

As explained above, the EPA has convened a proceeding for reconsideration based on the following two objections to the fugitive emission requirements: (1) The process and criteria for requesting and receiving approval for the use of an AMEL for the fugitive emissions requirements; and (2) the applicability of the fugitive emissions requirements to low production well sites. These issues determine the universe of sources that must implement the fugitive emissions requirements. With respect to the AMEL issue, the EPA recognizes that a number of states have developed programs to control oil and gas emission sources in their own states, and that certain owners or operators may achieve equivalent, or more, emission reduction from their affected source(s) than the required reduction under the 2016 Rule by complying with their state-mandated requirements. 81 FR 35871. During development of the 2016 Rule, the EPA evaluated state fugitive emissions programs in Colorado, Ohio, Pennsylvania, Texas, West Virginia, and Wyoming. Additionally, California has recently proposed regulations to reduce methane emissions from oil and gas activities, including proposing fugitive emissions requirements. These seven states represent a significant portion of the oil and gas activities in the U.S. To encourage states’ proactive efforts to reduce emissions from the oil and gas industry, the EPA included AMEL provisions in the final 2016 Rule, which can be used to request and obtain EPA approval of state programs, or other means, as an alternative for complying with the fugitive emissions requirements. *Id.*

While the AMEL provisions apply to work practice standards besides the fugitive emissions requirements, these other standards (*i.e.*, well completions and reciprocating compressors work practice standards) have been implemented since they were first promulgated in 2012<sup>3</sup> (subpart OOOO) to reduce VOC emissions from hydraulically fractured gas well

<sup>1</sup> Copies of these petitions are included in the docket for the 2016 Rule, Docket ID No. EPA-HQ-OAR-2010-0505.

<sup>2</sup> See Docket ID No. EPA-HQ-OAR-2010-0505-7730.

<sup>3</sup> Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews. 77 FR 49490 (August 16, 2012).

completions and reciprocating compressors used in production, and there has not been a demand for AMEL for these standards. In contrast, the newly promulgated fugitive emissions requirements are still in the process of being phased in.<sup>4</sup> In addition, as the EPA observed in the 2016 Rule, fugitive emissions monitoring is a field of emerging technology, and major advances are expected in the near future. 81 FR 35860–1. For the reasons stated above, the AMEL provisions are of particular importance to the fugitive emissions requirements as they directly impact how compliance can be achieved with respect to the fugitive emissions requirements. However, several administrative reconsideration petitions raised issues and questions regarding the AMEL provisions relative to the fugitive emissions requirements (*e.g.*, who can apply for and who can use an approved AMEL).

These inquiries and concerns suggest that the AMEL provisions included in the 2016 Rule, which were finalized without having been proposed for notice and comment, may not be sufficiently clear to facilitate effective application and approval of AMEL, and therefore fail to serve their intended purpose. The ability to apply for and obtain AMEL for fugitive emissions requirements determines whether well sites and compressor stations, in particular those subject to existing state programs or those which have invested in emerging technology, must now redirect or expend additional resources and efforts to implement the 2016 Rule's fugitive emissions requirements, which may negatively impact or otherwise complicate their compliance with applicable state programs and/or their progress in using emerging technology, an endeavor that may potentially be rendered unnecessary should the sources qualify for AMEL. For the reasons stated above, the EPA believes that it is reasonable to stay the fugitive emissions requirements while it completes a review of the current AMEL process via rulemaking.

The low production well site issue concerns the scope of the sources subject to the well site fugitive emissions requirements. The EPA had proposed to exempt low production well sites from the fugitive emissions requirements, believing the lower production associated with these wells would generally result in lower fugitive emissions. 80 FR 56639. However, in

the final rule, the EPA required that these well sites comply with the fugitive emissions requirements, based on information and rationale not presented for public comment during the proposal stage. See 81 FR 35856 (“... well site fugitive emissions are not correlated with levels of production, but rather based on the number of pieces of equipment and components”). Available information indicated that “30 percent of natural gas wells are low production wells, and 43 percent of all oil wells are low production wells.” 81 FR 35856. In light of the sizable percentage of well sites that may be impacted by the outcome of this reconsideration, the EPA believes that it is reasonable to stay the well site fugitive emissions requirements while the EPA reassesses whether an exemption is appropriate and, if so, establishes proper criteria for such exemption.

For closed vent systems used to comply with the emission standards for various equipment used in the oil and natural gas sector, the 2016 Rule requires certification by a professional engineer that a closed vent system design and capacity assessment was conducted under his or her direction or supervision and that the assessment and resulting report were conducted pursuant to the requirements of the 2016 Rule. This certification requirement must be met in order to comply with the emissions standards for centrifugal compressors, reciprocating compressors, pneumatic pumps, and storage vessels; as such, this requirement impacts a wide range of sources with respect to their ability to show compliance. With the exception of pneumatic pumps, all of the equipment mentioned above is covered by the oil and gas NSPS, subpart OOOO, that was promulgated in 2012, and have had to demonstrate compliance without this certification requirement. While the EPA has observed instances of inadequate design and capacities of the closed vent system resulting in excess emissions from some storage vessels, 80 FR 56649, it is not clear how pervasive this issue is, in particular with respect to all the other equipment mentioned above. Further, as noted by one petitioner, “no costs associated with the certification requirement were considered or provided for review during the proposal process.”<sup>5</sup> Section 111 of the CAA requires that the EPA consider, among other factors, the cost associated with establishing a new source performance standard. See 111(a)(1) of the CAA. The statute is thus

clear that cost is an important consideration in determining whether to impose a requirement.

In finalizing the 2016 Rule, the EPA made clear that it viewed the PE certification requirement to be an important aspect of a number of performance standards in the rule. The EPA acknowledges that it had not analyzed the costs associated with the PE certification requirement and evaluated whether the improved environmental performance this requirement may achieve justifies the associated costs and other compliance burden. Because the emission standards for these various equipment (with the exception of the well site pneumatic pump standards as discussed later in this notice) will continue to apply during the proposed stay of this certification requirement, emission reductions from this equipment will continue to be achieved during the stay. For the reasons stated above, the EPA believes that it is reasonable to stay the requirement for closed vent system certification by professional engineer while the EPA evaluates the benefits, as well as the cost and other possible compliance burden, associated with this requirement.

In addition to the closed vent system certification requirement, there are other issues that we are reconsidering that may further complicate a source's ability to comply with the well site pneumatic pump standards. Specifically, the 2016 Rule requires certification by a professional engineer of technical infeasibility in order for a well site pneumatic pump to qualify for an exemption from controlling emissions using an existing control or process. The certification requirement was included in the 2016 Rule without having been previously proposed for notice and comment. Further, the technical infeasibility exemption is not available for a well site that is a “greenfield” site, a caveat and term that was also not proposed for notice and comment and, as evident from several reconsideration petitions, has generated a number of questions and issues.

As explained above, certification of closed vent systems by a professional engineer affects how compliance with various emission standards is to be determined. The technical infeasibility exemption and the associated certification by professional engineer requirement, as well as the “greenfield” issues described above, dictate whether a source must comply with the emission reduction requirement for well site pneumatic pumps. These requirements and their associated issues directly impact the ability of a wide range of

<sup>4</sup> As mentioned above, the fugitive emissions requirements, including the June 3, 2017, deadline for conducting initial monitoring survey, are currently stayed for three months pursuant to section 307(d)(7)(B).

<sup>5</sup> See Docket ID No. EPA–HQ–OAR–2010–0505–7682, p. 1.

sources, in particular well site pneumatic pumps, to achieve and show compliance with their applicable standards. Therefore, the EPA believes it is reasonable to stay these requirements pending reconsideration.

The EPA is proposing to stay the fugitive emissions requirements, the well site pneumatic pump standards, and the requirements for certification by professional engineer for 2 years. As described above, these three requirements entail a wide range of technically complex issues. For example, the AMEL provisions involve determining equivalency with the fugitive emissions requirements, and the low production well site exemption requires determining the factors that correlate to fugitive emissions. Further, based on the great interest expressed by stakeholders (including states, industry, and manufacturers of emerging monitoring technology), in particular on the AMEL,<sup>6</sup> the EPA anticipates receiving a large amount of information during the reconsideration proceeding. Also, during the reconsideration proceeding the EPA intends to request comment on the cost and other compliance burden, among other relevant information, associated with the requirement for certification by a professional engineer. In light of the above, the EPA believes that two years would provide sufficient time to review available information and propose, take public comment, and issue a final action on the reconsideration of these issues. The administrative reconsideration petitions raise numerous other issues relative to the fugitive emission requirements, well site pneumatic pump standards, and requirements for certification by professional engineer other than those described above. The EPA has also been asked clarifying questions on implementation of these requirements from stakeholders since the 2016 Rule was published. These questions touch on issues such as the timeframe for repair of leaking components, timeframe for closed vent system inspection definitions related to fugitive emissions and pneumatic pump requirements, definitions of the affected facilities, and the temperature waiver for quarterly monitoring. Given the breadth of the issues identified in the petitions for reconsideration of the 2016 Rule, and the additional implementation questions from stakeholders following publication, the EPA believes that it is in the public

interest that it address these other related issues at the same time it reconsiders the fugitive emissions requirements, well site pneumatic pumps standards, and the certification by professional engineer requirements, thereby avoiding addressing these requirements in a piecemeal fashion. The EPA believes that staying the specified requirements for two years is necessary to provide sufficient time to complete the actions described above.

Note that we are not taking comment at this time on substantive issues concerning these requirements, or on any of the other provisions subject to the reconsideration. This notice simply proposes to stay the specified requirements for two years. The EPA is seeking comment pertaining to this stay and its duration. A separate **Federal Register** notice published in the near future will specifically solicit comment on substantive issues concerning these requirements.

### III. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www2.epa.gov/laws-regulations/laws-and-executive-orders>.

#### *A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is an economically significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket. The EPA prepared a Regulatory Impact Analysis (RIA) of the potential costs and benefits associated with the 2016 Rule, which is available at Docket ID No. EPA-HQ-OAR-2010-0505-7630. As this action affects two of the components that were included in the costs and benefits estimations, the fugitive requirements and the pneumatic pump requirements, as well as only affects three years of compliance activity, 2017 through 2019, the cost estimates provided here focus only on those affected provisions and years. It should be noted that these figures only represent the cost reductions associated with these activities. Although there would be foregone benefits as a result of this proposed delay, a quantitative estimate of this effect is not currently available, and therefore the associated foregone benefits are not presented.

This action delays compliance for fugitive requirements from approximately September 2017 until

September 2019. In the 2016 rule, fugitive components accumulated as affected sources from September 2015 until June 2017, when all accumulated and new sources moving forward had to be in compliance. The previously published three-month stay delayed compliance until September 2017. This proposed stay further delays compliance so affected components accumulate from September 2015 through September 2019, after which all accumulated sources and new sources moving forward must be in compliance.

This action also extends the stay for pneumatic pump requirements at well sites that was enacted in the three-month stay. Pneumatic pump affected facilities at well sites were required to be in compliance from November 2016 until June 2017 when EPA issued the three-month stay. Newly affected sources accumulate under the initial three-month stay starting in June 2017 to September 2017. This proposed stay delays compliance until September 2019, after which the accumulated affected sources and newly affected sources moving forward must be in compliance.

Costs and benefits for each year after 2019 remain unaffected. Using the estimated source counts as presented in Table 3–2 of the 2016 RIA, the EPA estimated a baseline for the capital costs, annual operating and maintenance costs and value of product recovery between 2017 and 2019 for the two requirements. This baseline accounts for the initial three-month stay. Then, the EPA estimated these costs under this proposed stay. Total costs for both actions were calculated as capital costs plus annual costs minus revenue from product recovery. These undiscounted costs are presented in Table 1, below. The difference between them, cost savings due to this proposed stay, is presented in Table 2. Table 3 presents the total costs, accounting for the value of product recovery, and their differences discounted to 2017 using both a 3 percent and a 7 percent discount rate, the present values of these costs, and their equivalent annualized values. The equivalent annualized values are the annualized present values, or the even flow of the present values, over the three years affected by this proposed action. These costs are presented in 2016 dollars.<sup>7</sup>

<sup>7</sup> Careful consideration must be made in comparing these costs to those presented in the 2016 RIA. Costs presented in the 2016 RIA are costs in 2020 and 2025 and are presented in 2012 dollars. Costs presented here are for 2017, 2018 and 2019 and presented in 2016 dollars, in accordance with OMB Guidance M–17–21 for EO 13771. In addition, some of the presented capital costs presented in the

<sup>6</sup> See e.g., Oil and Natural Gas Sector: Request for Information, Emerging Technologies. 81 FR 46670 (July 13, 2016), and associated docket EPA-HQ-OAR-2016-0346.

TABLE 1—COST ESTIMATES OF THE BASELINE AND THIS PROPOSAL, UNDISCOUNTED  
[2016\$ millions]

|            | Baseline      |              |                               |             | Proposal      |              |                               |             |
|------------|---------------|--------------|-------------------------------|-------------|---------------|--------------|-------------------------------|-------------|
|            | Capital costs | Annual costs | Revenue from product recovery | Total costs | Capital costs | Annual costs | Revenue from product recovery | Total costs |
| 2017 ..... | \$43          | \$61         | \$11                          | \$92        | \$3           | \$0          | \$0                           | \$3         |
| 2018 ..... | 21            | 153          | 28                            | 146         | 0             | 0            | 0                             | 0           |
| 2019 ..... | 21            | 199          | 36                            | 184         | 83            | 199          | 36                            | 246         |

**Note:** These costs only account for the fugitive emissions and well site pneumatic pumps requirements. We did not include the costs of professional engineer certification because these costs were not accounted for in the 2016 Rule. Values may not sum due to rounding.

TABLE 2—DIFFERENCE OF THE COST ESTIMATES OF THE BASELINE AND THIS PROPOSAL, UNDISCOUNTED  
[2016\$ millions]

|            | Difference    |              |                               |             |
|------------|---------------|--------------|-------------------------------|-------------|
|            | Capital costs | Annual costs | Revenue from product recovery | Total costs |
| 2017 ..... | -\$40         | -\$61        | -\$11                         | -\$89       |
| 2018 ..... | -21           | -153         | -28                           | -146        |
| 2019 ..... | 61            | 0            | 0                             | 61          |

TABLE 3—TOTAL COST ESTIMATES OF THE BASELINE AND THIS PROPOSAL, DISCOUNTED TO 2017  
[2016\$ millions]

|                                   | Baseline |      | Proposal |     | Difference |       |
|-----------------------------------|----------|------|----------|-----|------------|-------|
|                                   | 3%       | 7%   | 3%       | 7%  | 3%         | 7%    |
| 2017 .....                        | \$92     | \$92 | \$3      | \$3 | -\$89      | -\$89 |
| 2018 .....                        | 142      | 136  | 0        | 0   | -142       | -136  |
| 2019 .....                        | 174      | 161  | 231      | 214 | 58         | 53    |
| Present Value .....               | 408      | 390  | 234      | 217 | -173       | -172  |
| Equivalent Annualized Value ..... | 140      | 139  | 80       | 77  | -60        | -61   |

**Note:** These costs only account for the fugitive emissions and well site pneumatic pumps requirements. We did not include the costs of professional engineer certification because these costs were not accounted for in the 2016 Rule. These total costs account for the value of product recovery.

The total costs presented here reflect the total capital costs estimated for all affected sources in each year, as well as the accumulated annual operating and maintenance costs and associated product recovery values. The difference in estimated costs between the baseline and this proposed action are largely due to the annual operating and maintenance that would be incurred in 2017 and 2018 by affected components under the baseline that are not incurred under the stay. The small cost of this proposal in 2017 is due to the cost of compliance for affected pneumatic pumps at well sites before the three-month stay began. The difference in costs in 2019 is due to the capital costs borne by new sources constructed prior to 2019 whose compliance was delayed until 2019 under this proposal.

As can be seen in Table 2, the cost savings of this proposal in 2017 and 2018, mainly due to forgone annual operating and maintenance costs, are slightly offset by the higher costs in 2019, due to the larger number of sources that would be incurring capital and annual operating and maintenance costs in that year under this proposal. The larger costs savings in the early years leads to net cost savings from this action. As can be seen in Table 3, the estimated total present value of cost savings associated with this proposal are \$173 million when using a 3 percent discount rate and \$172 million when using a 7 percent discount rate. The equivalent annualized values of the cost savings are \$60 million per year when using a 3 percent discount rate and \$61 million per year using a 7 percent discount rate.

The estimates presented here are made under a few assumptions, including:

- The EPA is assuming that no affected entities with compliance dates after June 2017 have begun performing compliance activities. If some affected entities have already begun performing compliance activities, there are associated sunk costs and ongoing operating and maintenance costs that should be accounted for in the estimates of costs of this proposal; this would reduce the cost savings associated with this proposal.
- Affected entities may decide not to delay compliance by the full two years because earlier compliance may allow for coordination of regulatory and non-regulatory capital work, thus minimizing operational downtime. Earlier compliance leads to earlier

2016 RIA are annualized values, as are the presented total costs; capital costs, and therefore

total costs, are not annualized in the analysis presented here.

incurrence of annual costs and benefits, which would reduce the cost savings associated with this proposed action.

- However, this may also reduce capital costs for those entities electing to comply earlier under this proposal—for instance, if overtime payments and rush charges can be avoided. This may increase the cost savings associated with the proposal.

- The cost of the PE certification was not taken into account in the 2016 RIA and therefore the costs of this provision under the 2016 rule cannot be compared to the costs under this proposal. The inclusion of the costs of this certification would likely increase the cost savings under this proposal, as costs related to the certifications that would otherwise take place between September 2017 and September 2019 would no longer be incurred.

- The costs presented here assumes pneumatic pumps become affected evenly throughout the year. If more sources become affected in the earlier (later) months than is assumed, the associated sunk costs will be higher (lower) than presented and cost savings associated with this proposal will decrease (increase).

Given data limitations, the cost estimates related to this action have not been adjusted to reflect these analytic considerations. The cost estimates also do not reflect any changes in baseline conditions, with the exception of the initial three-month stay, since the analysis for the 2016 rule was conducted (e.g., new developments in state level fugitive emissions programs, technological change, or other factors affecting the cost of compliance activities).

Although the potential existence of sunk costs, voluntary early compliance, and changes in baseline assumptions would likely reduce the effects of this proposed action to less than the difference shown in Table 1, the impact in at least one year is still almost certainly greater than \$100 million, thus rendering this action economically significant under Executive Order 12866.

The analysis accompanying the 2016 Rule includes estimates of the 2016 Rule's emission reduction benefits. It should be noted that, just as the annual operating and maintenance costs and value of product recovery in 2017 and 2018 are not incurred by affected sources under the proposal, neither are the associated climate and human health benefits. Although there would be foregone benefits as a result of this proposed delay, a quantitative estimate of this effect is not currently available.

#### *B. Paperwork Reduction Act (PRA)*

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing 40 CFR part 60, subpart OOOO and has assigned OMB control number 2060-0673. The information collection requirements in the final 40 CFR 60, subpart OOOOa have been submitted for approval to the OMB under the PRA. The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR 2523.01. This action does not result in changes to the approved ICR for subpart OOOO or the submitted ICR for subpart OOOOa, so the information collection estimates of project cost and hour burdens have not been revised.

#### *C. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action proposes a limited stay for certain requirements. This proposed stay will decrease the burden on small entities subject to this rule. The EPA prepared a final RFA analysis for the 2016 Rule, which is available as part of the Regulatory Impact Analysis in the docket at Docket ID No. EPA-HQ-OAR-2010-0505-7630. We have therefore concluded that this action will have a net negative regulatory burden for all directly regulated small entities.

#### *D. Unfunded Mandates Reform Act (UMRA)*

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

#### *E. Executive Order 13132: Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

#### *F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

#### *G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

This action is subject to Executive Order 13045 because it is an economically significant regulatory action as defined by Executive Order 12866, and the EPA believes that the environmental health or safety risk addressed by this action may have a disproportionate effect on children. The basis for this determination can be found in the 2016 Rule (81 FR 35893). However, because this action merely proposes to delay the 2016 Rule, this action will not change any impacts of the 2016 Rule after the stay. Any impacts on children's health caused by the delay in the rule will be limited, because the length of the proposed stay is limited. The agency therefore believes it is more appropriate to consider the impact on children's health in the context of any substantive changes proposed as part of reconsideration.

#### *H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. The basis for this determination can be found in the 2016 Rule (81 FR 35894).

#### *I. National Technology Transfer and Advancement Act (NTTAA)*

This rulemaking does not involve technical standards.

#### *J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

Because this action merely proposes to delay action and does not change the requirements of the final rule, this action will not change any impacts of the rule when it is fully implemented. Any impacts on minority populations and low-income populations caused by

the delay in the rule will be limited, because the length of the proposed stay is limited. The agency therefore believes it is more appropriate to consider the impact on minority populations and low-income populations in the context of any substantive changes proposed as part of reconsideration.

#### List of Subjects in 40 CFR Part 60

Environmental protection,  
Administrative practice and procedure,  
Air pollution control, Reporting and  
recordkeeping.

Dated: June 12, 2017.

E. Scott Pruitt,  
Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

#### PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

#### Subpart OOOOa—[AMENDED]

■ 2. Section 60.5393a is amended by:

■ a. Staying paragraphs (b) and (c) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**]; and

■ b. Adding paragraph (f).

The addition reads as follows:

#### § 60.5393a What GHG and VOC standards apply to pneumatic pump affected facilities?

\* \* \* \* \*

(f) Pneumatic pumps at a well site are not subject to the requirements of paragraphs (d) and (e) of this section until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

#### § 60.5397a [AMENDED]

■ 3. Section 60.5397a is stayed until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

■ 4. Section 60.5410a is amended by:

■ a. Staying paragraphs (e)(2) through (5) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**];

■ b. Adding paragraph (e)(8); and

■ c. Staying paragraph (j) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The addition reads as follows:

**§ 60.5410a How do I demonstrate initial compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, collection of fugitive emissions components at a compressor station, and equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?**

\* \* \* \* \*

(e) \* \* \*

(8) Pneumatic pump affected facilities at a well are not subject to the requirements of paragraphs (e)(6) and (7) of this section until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

■ 5. Section 60.5411a is amended by:

■ a. Revising the introductory text;

■ b. Staying paragraph (d) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**]; and

■ c. Adding paragraph (e).

The revision and addition read as follows:

**§ 60.5411a What additional requirements must I meet to determine initial compliance for my covers and closed vent systems routing emissions from centrifugal compressor wet seal fluid degassing systems, reciprocating compressors, pneumatic pumps and storage vessels?**

You must meet the applicable requirements of this section for each cover and closed vent system used to comply with the emission standards for your centrifugal compressor wet seal degassing systems, reciprocating compressors, pneumatic pumps and storage vessels except as provided in paragraph (e) of this section.

\* \* \* \* \*

(e) Pneumatic pump affected facilities at a well site are not subject to the requirements of paragraph (a) of this section until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

■ 6. Section 60.5415a is amended by:

■ a. Revising paragraph (b) introductory text and adding paragraph (b)(4); and

■ b. Staying paragraph (h) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The revision and addition read as follows:

**§ 60.5415a How do I demonstrate continuous compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, and collection of fugitive emissions components at a compressor station affected facilities, and affected facilities at onshore natural gas processing plants?**

\* \* \* \* \*

(b) For each centrifugal compressor affected facility and each pneumatic pump affected facility, you must demonstrate continuous compliance according to paragraph (b)(3) of this section except as provided in paragraph (b)(4) of this section. For each centrifugal compressor affected facility, you also must demonstrate continuous compliance according to paragraphs (b)(1) and (2) of this section.

\* \* \* \* \*

(4) Pneumatic pump affected facilities at a well site are not subject to the requirements of paragraph (b)(3) of this section until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

■ 7. Section 60.5416a is amended by revising the introductory text and adding paragraph (d) to read as follows:

**§ 60.5416a What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my centrifugal compressor, reciprocating compressor, pneumatic pump, and storage vessel affected facilities?**

For each closed vent system or cover at your storage vessel, centrifugal compressor, reciprocating compressor and pneumatic pump affected facilities, you must comply with the applicable requirements of paragraphs (a) through (c) of this section, except as provided in paragraph (d) of this section.

\* \* \* \* \*

(d) Pneumatic pump affected facilities at a well site are not subject to the requirements of paragraphs (a) and (b) of this section until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

■ 8. Section 60.5420a is amended by:

■ a. Revising paragraph (b) introductory text;

■ b. Staying paragraphs (b)(7), (8), and (12) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**];

■ c. Adding paragraph (b)(13); and

■ d. Staying paragraphs (c)(15) through (17) until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The revision and addition read as follows:

Reply Attach. 8



**§ 60.5420a What are my notification, reporting, and recordkeeping requirements?**

\* \* \* \* \*

(b) *Reporting requirements.* You must submit annual reports containing the information specified in paragraphs (b)(1) through (8) and (12) of this section and performance test reports as specified in paragraph (b)(9) or (10) of this section, if applicable, except as provided in paragraph (b)(13) of this section. You must submit annual reports following the procedure specified in paragraph (b)(11) of this section. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to § 60.5410a. Subsequent annual reports are due no later than same date each year as the initial annual report. If you own or operate more than one affected facility, you may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) through (8) of this section, except as provided in paragraph (b)(13) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. You may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

\* \* \* \* \*

(13) The collection of fugitive emissions components at a well site (as defined in § 60.5430a), the collection of fugitive emissions components at a compressor station (as defined in § 60.5430a), and pneumatic pump affected facilities at a well site (as defined in § 60.5365a(h)(2)) are not subject to the requirements of paragraph (b)(1) of this section until [DATE 2 YEARS AFTER PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

[FR Doc. 2017-12698 Filed 6-15-17; 8:45 am]

BILLING CODE 6560-50-P

**FEDERAL COMMUNICATIONS COMMISSION**

**47 CFR Parts 2 and 25**

[**IB Docket No. 17-95; FCC 17-56**]

**Amends Rules Related to Satellite Earth Stations Mounted on Vessels, Vehicles and Aircraft**

**AGENCY:** Federal Communications Commission.

**ACTION:** Proposed rule.

**SUMMARY:** In this document, the Federal Communications Commission (Commission) proposes to streamline, consolidate, and harmonize rules governing earth stations in motion (ESIMs) used to provide satellite-based services on ships, airplanes and vehicles communicating with geostationary-satellite orbit (GSO), fixed-satellite service (FSS) satellite systems.

**DATES:** Comments are due on or before July 31, 2017. Reply comments are due on or before August 30, 2017.

**ADDRESSES:** You may submit comments, identified by IB Docket No. 17-95, by any of the following methods:

- *Federal Communications Commission's Web site:* <http://apps.fcc.gov/ecfs>. Follow the instructions for submitting comments.
- *People with Disabilities:* Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by email: [FCC504@fcc.gov](mailto:FCC504@fcc.gov) or phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

**FOR FURTHER INFORMATION CONTACT:** Cindy Spiers, 202-418-1593.

**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's Notice of Proposed Rulemaking (NPRM), FCC 17-56, adopted May 18, 2016, and released May 19, 2017. The full text of the NPRM is available at [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-17-56A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-56A1.pdf). The NPRM is also available for inspection and copying during business hours in the FCC Reference Information Center, Portals II, 445 12th Street SW., Room CY-A257, Washington, DC 20554. To request materials in accessible formats for people with disabilities, send an email to [FCC504@fcc.gov](mailto:FCC504@fcc.gov) or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

**Comment Filing Requirements**

Interested parties may file comments and reply comments on or before the dates indicated in the **DATES** section above. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS).

- *Electronic Filers.* Comments may be filed electronically using the Internet by accessing the ECFS, <http://apps.fcc.gov/ecfs>.
- *Paper Filers.* Parties who file by paper must include an original and four copies of each filing.

Filings may be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th Street SW., Room TW-A325, Washington, DC 20554. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street SW., Washington DC 20554.
- *Persons With Disabilities.* To request materials in accessible formats for persons with disabilities (Braille, large print, electronic files, audio format), or to request reasonable accommodations for filing comments (accessible format documents, sign language interpreters, CART, etc.), send an email to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call 202-418-0530 (voice) or 202-418-0432 (TTY).

**Ex Parte Presentations**

We will treat this proceeding as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules. Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph

## Attachment 2

U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, **Final Rule**, 81 Fed. Reg. 35,824 (June 3, 2016) (excerpts)

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2010-0505; FRL-9944-75-OAR]

RIN 2060-AS30

**Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** This action finalizes amendments to the current new source performance standards (NSPS) and establishes new standards. Amendments to the current standards will improve implementation of the current NSPS. The new standards for the oil and natural gas source category set standards for both greenhouse gases (GHGs) and volatile organic compounds (VOC). Except for the implementation improvements, and the new standards for GHGs, these requirements do not change the requirements for operations covered by the current standards.

**DATES:** This final rule is effective on August 2, 2016.

The incorporation by reference (IBR) of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 2, 2016.

**ADDRESSES:** The Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA-HQ-OAR-2010-0505. All documents in the docket are listed on the <http://www.regulations.gov> Web site. Although listed in the index, some information is not publicly available, e.g., confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** For further information concerning this action, contact Ms. Amy Hambrick, Sector Policies and Programs Division (E143-05), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number: (919) 541-0964; facsimile number: (919) 541-3470; email address: [hambrick.amy@epa.gov](mailto:hambrick.amy@epa.gov) or Ms. Lisa Thompson, Sector Policies and

Programs Division (E143-05), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number: (919) 541-9775; facsimile number: (919) 541-3470; email address: [thompson.lisa@epa.gov](mailto:thompson.lisa@epa.gov). For other information concerning the EPA's Oil and Natural Gas Sector regulatory program, contact Mr. Bruce Moore, Sector Policies and Programs Division (E143-05), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number: (919) 541-5460; facsimile number: (919) 541-3470; email address: [moore.bruce@epa.gov](mailto:moore.bruce@epa.gov).

**SUPPLEMENTARY INFORMATION:** *Outline.*

The information presented in this preamble is presented as follows:

- I. Preamble Acronyms and Abbreviations
- II. General Information
  - A. Executive Summary
  - B. Does this action apply to me?
  - C. Where can I get a copy of this document?
  - D. Judicial Review
- III. Background
  - A. Statutory Background
  - B. Regulatory Background
  - C. Other Notable Events
  - D. Stakeholder Outreach and Public Hearings
  - E. Related State and Federal Regulatory Actions
- IV. Regulatory Authority
  - A. The Oil and Natural Gas Source Category Listing Under CAA Section 111(b)(1)(A)
  - B. Impacts of GHGs, VOC and SO<sub>2</sub> Emissions on Public Health and Welfare
  - C. GHGs, VOC and SO<sub>2</sub> Emissions From the Oil and Natural Gas Source Category
  - D. Establishing GHG Standards in the Form of Limitations on Methane Emissions
- V. Summary of Final Standards
  - A. Control of GHG and VOC Emissions in the Oil and Natural Gas Source Category—Overview
  - B. Centrifugal Compressors
  - C. Reciprocating Compressors
  - D. Pneumatic Controllers
  - E. Pneumatic Pumps
  - F. Well Completions
  - G. Fugitive Emissions From Well Sites and Compressor Stations
  - H. Equipment Leaks at Natural Gas Processing Plants
  - I. Liquids Unloading Operations
  - J. Recordkeeping and Reporting
  - K. Reconsideration Issues Being Addressed
  - L. Technical Corrections and Clarifications
  - M. Prevention of Significant Deterioration and Title V Permitting
  - N. Final Standards Reflecting Next Generation Compliance and Rule Effectiveness
- VI. Significant Changes Since Proposal
  - A. Centrifugal Compressors
  - B. Reciprocating Compressors
  - C. Pneumatic Controllers
  - D. Pneumatic Pumps

- E. Well Completions
- F. Fugitive Emissions From Well Sites and Compressor Stations
- G. Equipment Leaks at Natural Gas Processing Plants
- H. Reconsideration Issues Being Addressed
- I. Technical Corrections and Clarifications
- J. Final Standards Reflecting Next Generation Compliance and Rule Effectiveness
- K. Provision for Equivalency Determinations
- VII. Prevention of Significant Deterioration and Title V Permitting
  - A. Overview
  - B. Applicability of Tailoring Rule Thresholds Under the PSD Program
  - C. Implications for Title V Program
- VIII. Summary of Significant Comments and Responses
  - A. Major Comments Concerning Listing of the Oil and Natural Gas Source Category
  - B. Major Comments Concerning EPA's Authority To Establish GHG Standards in the Form of Limitations on Methane Emissions
  - C. Major Comments Concerning Compressors
  - D. Major Comments Concerning Pneumatic Controllers
  - E. Major Comments Concerning Pneumatic Pumps
  - F. Major Comments Concerning Well Completions
  - G. Major Comments Concerning Fugitive Emissions From Well Sites and Compressor Stations
  - H. Major Comments Concerning Final Standards Reflecting Next Generation Compliance and Rule Effectiveness Strategies
- IX. Impacts of the Final Amendments
  - A. What are the air impacts?
  - B. What are the energy impacts?
  - C. What are the compliance costs?
  - D. What are the economic and employment impacts?
  - E. What are the benefits of the final standards?
- X. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
  - B. Paperwork Reduction Act (PRA)
  - C. Regulatory Flexibility Act (RFA)
  - D. Unfunded Mandates Reform Act of 1995 (UMRA)
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
  - H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51
  - J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Reply Attach. 11

infeasibility exemption in the rule is vague and could detract significantly from the overall value of this standard if not narrowly limited in application. The commenter notes that because of the swiftly increasing production of oil (along with associated natural gas) in the United States which produces very high initial rates of oil and associated gas, it is vital that the rule's requirements apply rigorously.

*Response:* The EPA agrees that REC should be preferred over combustion due to the secondary environmental impact from combustion. The final rule reflects such preference by requiring REC unless it is technically infeasible, in which event the recovered gas is to be routed to a completion combustion device. Further, to ensure that the exemption from REC due to technical infeasibility is limited to those situations where the operator can demonstrate that each of the options to capture and use gas beneficially is not feasible and why, we have expanded recordkeeping requirements in the final rule to include: (1) Detailed documentation of the reasons for the claim of technical infeasibility with respect to all four options provided in § 60.5375a(a)(1)(ii), including but not limited to, names and locations of the nearest gathering line; capture, re-injection, and reuse technologies considered; aspects of gas or equipment prohibiting use of recovered gas as a fuel onsite; and (2) technical considerations prohibiting any other beneficial use of recovered gas on site.

We believe these additional provisions will support a more diligent and transparent application of the intent of the technical infeasibility exemption from the REC requirement in the final rule. This information must be included in the annual report made available to the public 30 days after submission through CEDRI and WebFIRE, allowing for public review of best practices and periodic auditing to ensure flaring is limited and emissions are minimized.

#### *G. Major Comments Concerning Fugitive Emissions From Well Sites and Compressor Stations*

##### **1. Modification Definitions for Well Sites**

*Comment:* Several commenters assert that the definition of "modification" of a well site under the proposed rule in § 60.5365a(i) is overly broad because it would bring many existing well sites under the Rule's requirements. The commenters believe that drilling a new well or hydraulically fracturing an existing well does not increase the probability of a leak from an individual

component and no new components result from these activities, thus the potential emissions rate does not change and should not be considered a modification.

*Response:* The EPA believes the addition of a new well or the hydraulically fracturing or refracturing of an existing well will increase emissions from the well site for the following reasons. These events are followed by production from these wells which generate additional emissions at the well sites. Some of these additional emissions will pass through leaking fugitive emission components at the well sites (in addition to the emissions already leaking from those components). Further, it is not uncommon that an increase in production would require additional equipment and, therefore, additional fugitive emission components at the well sites. We also believe that defining "modification" to include these two events, rather than requiring complex case-by-case analysis to determine whether there is emission increase in each event, will ease implementation burden for owners and operators. For the reasons stated above, EPA is finalizing the definition of "modification" of a well site, as proposed.

##### **2. Monitoring Plan**

*Comment:* Commenters expressed concerns about the elements of the proposed monitoring plans and encouraged the EPA to consult with the oil and gas industry and states to adopt requirements that would meet their specific needs. Commenters suggested that an area-wide monitoring plan should be allowed instead of a corporate-wide or site specific plan. The area plan would allow owners to write a plan that covers various areas for each specific region since operators may rely on contractors in one area due to location while company-owned monitoring equipment may be used within another area.

*Response:* The EPA participated in numerous meetings with industry, environmental and state stakeholders to discuss the proposed rule. During these meetings industry stakeholders further explained why a corporate-wide monitoring plan would be difficult to develop due to their corporate structures, well site locations, basin characteristics and many other factors. They also indicated that a site-specific plan would be redundant since many well sites within a district or field office are similar and would utilize the same personnel, contractors or monitoring equipment. The industry stakeholders provided input on specific elements of

the monitoring plan, such as the walking path requirement. Based on the comments that we received and subsequent stakeholder meetings, we have made changes to the monitoring plan and have further explained our intent for the walking path. We have also modified the digital photograph recordkeeping requirements for sources of fugitive emissions. See section VI.f.1.h of this preamble for further discussion.

#### *H. Major Comments Concerning Final Standards Reflecting Next Generation Compliance and Rule Effectiveness Strategies*

##### **1. Electronic Reporting**

*Comment:* While some commenters express support, several commenters oppose electronic reporting of compliance-related records. Some of the commenters state that they have an obligation under the rule to maintain these records and make them available to the regulatory agency upon request, and this should be sufficient. Providing all the records requested under the proposed rule would likely cause a backlog of correspondence between the regulatory agency and the industry. Other commenters expressed concern that sensitive company information could be present in the records, and other parties could use a FOIA request to obtain the records.

Additional commenters pointed out that the EPA should not require electronic reporting until CEDRI is modified to accommodate the unique nature of the oil and natural gas production industry. As the commenters understand the operational characteristics of CEDRI, the system links reports for each affected facility to the site at which they are located. Under subparts OOOO and OOOOa, there is no unique site identifier. This would result in owners and operators having to deconstruct the annual report in order to obtain the affected facility level data needed for CEDRI. The EPA did not account for this burden and cost. The commenters request that should electronic reporting be required, that CEDRI be revised to accept the annual reports as currently specified in the proposed rule as a pdf file or hardcopy until these issues can be resolved. Commenters also request that CEDRI be modified to accept area-wide reports rather than site-level reports. Additionally, commenters noted that the definition of "certifying official" under CEDRI is different than in the proposed rule.

Finally, since the EPA did not propose regulatory language for these

# Attachment 3

U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New and Modified Sources, **Proposed Rule**, 80 Fed. Reg. 56,593 (Sept. 18, 2015) (excerpts)

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 60****[EPA-HQ-OAR-2010-0505; FRL-9929-75-OAR]****RIN 2060-AS30****Oil and Natural Gas Sector: Emission Standards for New and Modified Sources****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Proposed rule.

**SUMMARY:** This action proposes to amend the new source performance standards (NSPS) for the oil and natural gas source category by setting standards for both methane and volatile organic compounds (VOC) for certain equipment, processes and activities across this source category. The Environmental Protection Agency (EPA) is including requirements for methane emissions in this proposal because methane is a greenhouse gas (GHG), and the oil and natural gas category is currently one of the country's largest emitters of methane. In 2009, the EPA found that by causing or contributing to climate change, GHGs endanger both the public health and the public welfare of current and future generations. The EPA is proposing both methane and VOC standards for several emission sources not currently covered by the NSPS and proposing methane standards for certain emission sources that are currently regulated for VOC. The proposed amendments also extend the current VOC standards to the remaining unregulated equipment across the source category and additionally establish methane standards for this equipment. Lastly, amendments to improve implementation of the current NSPS are being proposed which result from reconsideration of certain issues raised in petitions for reconsideration that were received by the Administrator on the August 16, 2012, final NSPS for the oil and natural gas sector and related amendments. Except for the implementation improvements and the setting of standards for methane, these amendments do not change the requirements for operations already covered by the current standards.

**DATES:** Comments. Comments must be received on or before November 17, 2015. Under the Paperwork Reduction Act(PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or

before November 17, 2015. The EPA will hold public hearings on the proposal. Details will be announced in a separate announcement.

**ADDRESSES:** Submit your comments, identified by Docket ID Number EPA-HQ-OAR-2010-0505, to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

Instructions: All submissions must include agency name and respective docket number or Regulatory Information Number (RIN) for this rulemaking. Direct your comments to Docket ID Number EPA-HQ-OAR-2010-0505. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through [www.regulations.gov](http://www.regulations.gov) or email. (See section III.B below for instructions on submitting information claimed as CBI.) The [www.regulations.gov](http://www.regulations.gov) Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you submit an electronic comment through [www.regulations.gov](http://www.regulations.gov), the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM

you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. If you send an email comment directly to the EPA without going through [www.regulations.gov](http://www.regulations.gov), your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. Electronic files should avoid the use of special characters, any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at: [www.epa.gov/epahome/dockets.htm](http://www.epa.gov/epahome/dockets.htm).

Docket: The EPA has established a docket for this rulemaking under Docket ID Number EPA-HQ-OAR-2010-0505. All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in [www.regulations.gov](http://www.regulations.gov) or in hard copy at the EPA Docket Center, EPA WJC West Building, Room Number 3334, 1301 Constitution Avenue NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For information concerning this action, or for other information concerning the EPA's Oil and Natural Gas Sector regulatory program, contact Mr. Bruce Moore, Sector Policies and Programs Division (E143-05), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number: (919) 541-5460; facsimile number: (919) 541-3470; email address: [moore.bruce@epa.gov](mailto:moore.bruce@epa.gov).

**SUPPLEMENTARY INFORMATION:** *Outline.* The information presented in this preamble is organized as follows:

- I. Preamble Acronyms and Abbreviations
- II. Executive Summary
  - A. Purpose of the Regulatory Action
  - B. Summary of the Major Provisions of the Regulatory Action
  - C. Costs and Benefits
- III. General Information
  - A. Does this reconsideration notice apply to me?

Reply Attach. 14

specific numbers of components rather than percentages of components for triggering change in survey frequency discussed in this action. We also solicit comment on whether a performance-based frequency or a fixed frequency is more appropriate.

As discussed in more detail in section VIII.G below and the TSD for this action available in the docket, we have identified OGI technology as the BSER for detecting fugitive emissions from new and modified compressor stations.

The proposed standards apply to new and modified compressor stations throughout the oil and natural gas source category. As explained in section VII.G.3 below, compressor stations are considered modified for the purposes of these fugitive emission standards when one or more compressors is added to the station after [effective date of final rule].

### 3. Modification of the Collection of Fugitive Emissions Components at Well Sites and Compressor Stations

For the purposes of the fugitive emission standards at well sites and compressor stations, we are proposing definitions of “modification” for those facilities that are specific to these provisions and for this purpose only. As provided in section 60.14(f), such provisions in the specific subparts would supersede any conflicting provisions in § 60.14 of the General Provisions. This definition does not affect other standards under this subpart for wells, other equipment at well sites or compressors.

For purposes of the proposed fugitive emissions standards at well sites, we propose that a modification to a well site occurs only when a new well is added to a well site (regardless of whether the well is fractured) or an existing well on a well site is fractured or refractured. When a new well is added or a well is fractured or refractured, there is an increase in emissions to the fugitive emissions components because of the addition of piping and ancillary equipment to support the well, along with potentially greater pressures and increased production brought about by the new or fractured well. Other than these events, we are not aware of any other physical change to a well site that would result in an increase in emissions from the collection of fugitive components at such well site. To clarify and ease implementation, we propose to define “modification” to include only these two events for purposes of the fugitive emissions provisions at well sites. We note that under § 60.5365a(a)(1) a well that is refractured, and for which the well completion operation is conducted

according to the requirements of § 60.5375a(a)(1) through (4), is not considered a modified well and therefore does not become an affected facility under the NSPS. We would like to clarify that such an exclusion of a “well” from applicability under the NSPS would have no effect on the affected facility status of the “well site” for purposes of the proposed fugitive emissions standards. Accordingly, a well at an existing well site that is refractured constitutes a modification of the well site, which then would be an affected facility for purposes of the fugitive emission standards at § 60.5397a, regardless of whether the well itself is an affected facility.

In the 2012 NSPS, we provided that completion requirements do not apply to refracturing of an existing well that is completed responsibly (*i.e.* green completions). Building on the 2012 NSPS, the EPA intends to continue to encourage corporate-wide voluntary efforts to achieve emission reductions through responsible, transparent and verifiable actions that would obviate the need to meet obligations associated with NSPS applicability, as well as avoid creating disruption for operators following advanced responsible corporate practices. To encourage companies to continue such good corporate policies and encourage advancement in the technology and practices, we solicit comment on criteria we can use to determine whether and under what conditions well sites operating under corporate fugitive monitoring programs can be deemed to be meeting the equivalent of the NSPS standards for well site fugitive emissions such that we can define those regimes as constituting alternative methods of compliance or otherwise provide appropriate regulatory streamlining. We also solicit comment on how to address enforceability of such alternative approaches (*i.e.*, how to assure that these well sites are achieving, and will continue to achieve, equal or better emission reduction than our proposed standards).

For the reasons stated above, we are also soliciting comments on criteria we can use to determine whether and under what conditions all new or modified well sites or compressor stations operating under corporate fugitive monitoring programs can be deemed to be meeting the equivalent of the NSPS standards for well sites or compressor stations fugitive emissions such that we can define those regimes as constituting alternative methods of compliance or otherwise provide appropriate regulatory streamlining. We also solicit comment on how to address

enforceability of such alternative approaches (*i.e.*, how to assure that these well sites and compressor stations are achieving, and will continue to achieve, equal or better emission reduction than our proposed standards).

For purposes of the proposed standards for fugitive emission at compressor stations, we propose that a modification occurs only when a compressor is added to the compressor station or when physical change is made to an existing compressor at a compressor station that increases the compression capacity of the compressor station. Since fugitive emissions at compressor stations are from compressors and their associated piping, connections and other ancillary equipment, expansion of compression capacity at a compressor station, either through addition of a compressor or physical change to the an existing compressor, would result in an increase in emissions to the fugitive emissions components. Other than these events, we are not aware of any other physical change to a compressor station that would result in an increase in emissions from the collection of fugitive components at such compressor station. To clarify and ease implementation, we define “modification” as the addition of a compressor for purposes of the fugitive emissions provisions at compressor stations.

### H. Equipment Leaks at Natural Gas Processing Plants

We are proposing standards to control methane and VOC emissions from equipment leaks at natural gas processing plants. These requirements are the same as the VOC equipment leak requirements in the 2012 NSPS and would require NSPS part 60, subpart VVa level of control, including a detection level of 500 ppm as in the 2012 NSPS. As discussed further in section VIII.H, we propose that the subpart VVa level of control applied plant-wide is the BSER for controlling methane emissions from equipment leaks at onshore natural gas processing plants. We believe it provides the greatest emission reductions of the options we considered in our analysis in Section VIII.H, and that the costs are reasonable.

### I. Liquids Unloading Operations

For the reasons discussed in section VIII.I, at this time the EPA does not have sufficient information to propose a standard for liquids unloading. However, we are requesting comment on nationally applicable technologies and techniques that reduce methane and VOC emissions from these events.

emissions.<sup>87</sup> In addition, these control technologies are the same as those required in the 2012 NSPS to control completion emissions from hydraulically fractured gas well completions.

The EPA is aware that oil wells cannot perform a REC if there is not sufficient well pressure or gas content during the well completion to operate the surface equipment required for a REC. In the 2012 NSPS the EPA did not require low pressure gas wells to perform REC, but operators were required to control those well completions using combustion.<sup>88</sup> We solicit comment on the types of oil wells that will not be capable of performing a REC or combusting completion emissions due to technical considerations such as low pressure or low gas content, or other physical characteristics such as location, well depth, length of hydraulic fracturing, or drilling direction (e.g., horizontal, vertical, directional).<sup>89</sup> Additionally, we solicit comment on all aspects of our proposal to regulate methane and VOC emissions from hydraulically fractured oil well completions.

As shown in the analyses presented above, the BSER for hydraulically fractured oil wells is the same as that for gas wells. Accordingly, we are proposing to apply the current requirements for hydraulically fractured gas well completions to hydraulically fractured oil well completions. It is logical that the BSER analyses would result in the same BSER determinations for hydraulically fractured gas and oil wells, because the available options for controlling emissions and their current use in the field are the same. Several public and peer reviewer comments on the white paper noted that the control technologies used for controlling emissions from hydraulically fractured oil well completions are the same as those used for completions of hydraulically fractured gas wells. The commenters further noted that in many cases it is difficult to distinguish gas

wells from oil wells, because many wells produce both gas and oil. Consistent standards for completions of hydraulically fractured gas wells and completions of hydraulically fractured oil wells will remove the need for operators to distinguish a gas well completion from an oil well completion for the purposes of complying with subpart OOOO. This change will improve the implementation of the standards by providing greater certainty as to which well completions must comply with the standards.

We are requesting comment on excluding low production wells (i.e., those with an average daily production of 15 barrel equivalents or less)<sup>90</sup> from the standards for well completions. It is our understanding that low production wells have inherently low emissions from well completions and many are owned and operated by small businesses. We are concerned about the burden of the well completion requirement on small businesses, in particular where there is little emission reduction to be achieved. We recognize that identification of these wells prior to completion events is difficult. We believe that drilling of a low production well may be unintentional and may be infrequent, but production may nevertheless proceed due to economic reasons. We solicit comment and information on emissions associated with low production wells, characteristics of these wells and supporting information that would help owners/operators and enforcement personnel identify these wells prior to completion. In addition, we understand that a daily average of 15 barrel equivalents is representative of low production wells for some purposes, we solicit comment on the appropriateness of this threshold for applying the standards for well completions.

Further, we are proposing that wells with a gas-to-oil ratio (GOR) of less than 300 scf of gas per barrel of oil produced would not be affected facilities subject to the well completion provisions of the NSPS.<sup>91</sup> We solicit comment on whether a GOR of 300 is the appropriate applicability threshold, and if the GOR of nearby wells would be a reliable indicator in determining the GOR of a new or modified well. The reason for

the proposed threshold GOR of 300 is that separators typically do not operate at a GOR less than 300, which is based on industry experience rather than a vetted technical specification for separator performance. Though, in theory, any amount of free gas could be separated from the liquid, the reality is that this is not practical given the design and operating parameters of separation units operating in the field.

We believe that having no threshold may create a significant burden for operators to control emissions for these wells with just a trace of gas. EIA data show that the number of "oil only" wells drilled from 2007–2012 was less than 20 percent.<sup>92</sup> The potential emission characteristic of oils with a GOR of 300 is relevant when deciding whether this is a reasonable threshold. Primarily, the concern is volatility. The threshold must be low enough that the oil produced is considered non-volatile. Non-volatile "black oils" (oil likely to not have gases or light hydrocarbons associated with it) are generally defined as having GOR values in the range of 200 to 900.<sup>93</sup> Therefore, oil wells with GORs less than 300 are at the lower end of this range, and will not likely have enough gas associated that it can be separated. Therefore, the EPA is proposing that the NSPS requirements for well completions do not apply to completions wells with hydraulic fracturing that have a GOR of less than 300 scf/barrel.

We are soliciting comment on whether the well completion provisions of the proposed rule can be implemented on the effective date of the rule in the event of potential shortage of REC equipment and, if not, how a phase in could be structured. We believe that there will be a sufficient supply of REC equipment available by the time the NSPS becomes effective. However, we request comment on whether sufficient supply of this equipment and personnel to operate it will be available to accommodate the increased number of RECs by the effective date of the NSPS. We also request specific estimates of how much time would be required to get enough equipment in operation to accommodate the full number of RECs performed annually. In the event that public comments indicate that available equipment would likely be insufficient to accommodate the increase in number of REC performed, we are considering phasing in requirements for well completions in the final rule. Such a phased in approach could be structured

<sup>87</sup> The EPA received six peer review comments and several submissions of technical information and data on this paper, available for review at <http://www.epa.gov/airquality/oilandgas/whitepapers.html>.

<sup>88</sup> Following publication of the 2012 NSPS, EPA received a joint petition for administrative reconsideration of the rule. The petitioners questioned the technical merits of the low pressure well definition and asserted that the public had not had an opportunity to comment on the definition. EPA re-proposed the definition of "low pressure gas well," on March 23, 2015 (80 FR 15180), and took comment on IPAA's alternative definition. EPA has finalized this definition in a separate action.

<sup>89</sup> Many of these data are available in the DrillingInfo database. More information is available at: <http://info.drillinginfo.com>.

<sup>90</sup> For the purposes of this discussion, we define "low production well" as a well with an average daily production of 15 barrel equivalents or less. This reflects the definition of a stripper well property in IRC 613A(c)(6)(E).

<sup>91</sup> On February 24, 2015, API submitted a comment to EPA stating that oil wells with GOR values less than 300 do not have sufficient gas to operate a separator. <http://www.regulations.gov/#/documentDetail;D=EPA-HQ-OAR-2014-0631-0137>.

<sup>92</sup> <http://www.eia.gov/todayinenergy/detail.cfm?id=13571#>.

<sup>93</sup> [http://petrowiki.org/Oil\\_fluid\\_characteristics](http://petrowiki.org/Oil_fluid_characteristics).



begin conducting fugitive emissions monitoring.

We received new information indicating that some companies could experience logistical challenges with the availability of OGI instrumentation and qualified OGI technicians and operators to perform monitoring surveys and in some instances repairs. We solicit comment on both the availability of OGI instruments and the availability of qualified OGI technicians and operators to perform surveys and repairs.

We are proposing to exclude low production well sites (i.e., a low production site is defined by the average combined oil and natural gas production for the wells at the site being less than 15 barrels of oil equivalent (boe) per day averaged over the first 30 days of production)<sup>106</sup> from the standards for fugitives emissions from well sites. We believe the lower production associated with these wells would generally result in lower fugitive emissions. It is our understanding that fugitive emissions at low production well sites are inherently low and that such well sites are mostly owned and operated by small businesses. We are concerned about the burden of the fugitive emission requirement on small businesses, in particular where there is little emission reduction to be achieved. To more fully evaluate the exclusion, we solicit comment on the air emissions associated with low production wells, and the relationship between production and fugitive emissions. Specifically, we solicit comment on the relationship between production and fugitive emissions over time. While we have learned that a daily average of 15 barrel per day is representative of low production wells, we solicit comment on the appropriateness of this threshold for applying the standards for fugitive emission at well sites. Further, we solicit comment on whether EPA should include low production well sites for fugitive emissions and if these types of well sites are not excluded, should they have a less frequent monitoring requirement.

We are also requesting comment on whether there are well sites that have inherently low fugitive emissions, even when a new well is drilled or a well site is fractured or refractured and, if so, descriptions of such type(s) of well sites. The proposed standards are not intended to cover well sites with no fugitive emissions of methane or VOC. We are aware that some sites may have

inherently low fugitive emissions due to the characteristics of the site, such as the gas to oil ratio of the wells or the specific types of equipment located on the well site. We solicit comment on these characteristics and data that would demonstrate that these sites have low methane and VOC fugitive emissions.

We are requesting comment on whether there are other fugitive emission detection technologies for fugitive emissions monitoring, since this is a field of emerging technology and major advances are expected in the near future. We are aware of several types of technologies that may be appropriate for fugitive emissions monitoring such as Geospatial Measurement of Air Pollutants using OTM-33 approaches (e.g., Picarro Surveyor), passive sorbent tubes using EPA Methods 325A and B, active sensors, gas cloud imaging (e.g., Rebellion photonics), and Airborne Differential Absorption Lidar (DIAL). Therefore, we are specifically requesting comments on details related to these and other technologies such as the detection capability; an equivalent fugitive emission repair threshold to what is required in the proposed rule for OGI; the frequency at which the fugitive emissions monitoring surveys should be performed and how this frequency ensures appropriate levels of fugitive emissions detection; whether the technology can be used as a stand-alone technique or whether it must be used in conjunction with a less frequent (and how frequent) OGI monitoring survey; the type of restrictions necessary for optimal use; and the information that is important for inclusion in a monitoring plan for these technologies.

## 2. Fugitive Emissions From Compressor Stations

Fugitive emissions at compressor stations in the oil and natural gas source category may occur for many reasons (e.g., when connection points are not fitted properly, or when seals and gaskets start to deteriorate). Changes in pressure and mechanical stresses can also cause fugitive emissions. Potential sources of fugitive emissions include agitator seals, distance pieces, crank case vents, blowdown vents, connectors, pump seals or diaphragms, flanges, instruments, meters, open-ended lines, pressure relief devices, valves, open thief hatches or holes in storage vessels, and similar items on glycol dehydrators (e.g., pumps, valves, and pressure relief devices). Equipment that vents as part of normal operations, such as gas driven pneumatic controllers, gas driven pneumatic pumps or the normal operation of blowdown vents are not

considered to be sources of fugitive emissions.

Based on our review of the public and peer review comments on the white paper and the Colorado and Wyoming state rules, we believe that there are two options for reducing methane and VOC fugitive emissions at compressor stations: (1) A fugitive emissions monitoring program based on individual component monitoring using EPA Method 21 for detection combined with repairs, or (2) a fugitive emissions monitoring program based on the use of OGI detection combined with repairs. Several public and peer reviewer comments on the white paper noted that these technologies are currently used by industry to reduce fugitive emissions from the production segment in the oil and natural gas industry.

Each of these control options are evaluated below based on varying the frequency of conducting the monitoring survey and fugitive emissions repair threshold (e.g., the specified concentration when using Method 21 or visible identification of methane or VOC when an OGI instrument is used). For our analysis, we considered quarterly, semiannual and annual monitoring frequencies. For Method 21, we considered 10,000 ppm, 2,500 ppm and 500 ppm fugitive repair thresholds. The leak definitions for other NSPS referencing Method 21 range from 500–10,000 ppm. Therefore, we selected 500 ppm, 2,500 ppm and 10,000 ppm. For OGI, we considered visible emissions as the fugitive repair threshold (i.e., emissions that can be seen using OGI). EPA's recent work with OGI indicate that fugitive emissions at a concentration of 10,000 ppm are generally detectable using OGI instrumentation, provided that the right operating conditions (e.g., wind speed and background temperature) are present. Work is ongoing to determine the lowest concentration that can be reliably detected using OGI.<sup>107</sup>

In order to estimate fugitive emissions from compressor stations, we used component counts from the GRI/EPA report<sup>108</sup> for each of the compressor station segments. Fugitive emission factors from AP-42<sup>109</sup> were used to estimate emissions from gathering and boosting stations in the production

<sup>107</sup> Draft Technical Support Document Appendices, Optical Gas Imaging Protocol (40 CFR part 60, Appendix K), August 11, 2015.

<sup>108</sup> Gas Research Institute/U.S. Environmental Protection Agency, Research and Development, Methane Emission Factors from the Natural Gas Industry, Volume 8, Equipment Leaks, June 1996 (EPA-600/R-96-030h).

<sup>109</sup> Environmental Protection Agency, Protocol for Equipment Leak Emission Estimates, Table 2-4, November 1995 (EPA-453/R-95-017).

<sup>106</sup> For the purposes of this discussion, we define 'low production well' as a well with an average daily production of 15 barrel equivalents or less. This reflects the definition of a stripper well property in IRC 613A(c)(6)(E).

## Attachment 4

U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, **Background Technical Support Document** for the Final New Source Performance Standards (May 2016) (excerpts)



# Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources

Background Technical Support Document for the  
Final New Source Performance Standards  
40 CFR Part 60, subpart OOOOa

May, 2016

**Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources**

By:

EC/R, Incorporated  
501 Eastowne Dr., Suite 250  
Chapel Hill, North Carolina 27514

Prepared for:

Amy Hambrick and Lisa Thompson, Work Assignment Managers  
Office of Air Quality Planning and Standards  
Sector Policies and Programs Division

U.S. Environmental Protection Agency  
Office of Air and Radiation  
Office of Air Quality Planning and Standards  
Research, Triangle Park, North Carolina

## **1.0 INTRODUCTION**

This background technical support document (TSD) provides information relevant to the development of the final rule Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources. The final rule establishes GHG standards, in the form of limitations on methane, for certain sources that are currently regulated for VOC but not GHG. It also establishes both VOC and GHG standards certain sources that are currently unregulated for either emissions.

Chapter 2 presents an overview of the oil and natural gas sector and source category. This chapter is intended to provide introductory material on the oil and natural gas source category, as listed under section 111(b)(1)(A).

The remainder of the TSD is presented in two volumes; Volume 1 provides the unit-level analysis supporting the determination of the best system of emission reduction (BSER); and Volume 2 presents the national impacts of the regulatory decisions for the final rule.

### **1.1 Volume 1 - Unit-Level BSER Analysis**

Chapters 3 through Chapter 7 present detailed information and analyses pertaining to each emissions source that was considered in this regulatory action. They include emission data and discussions of available control options and their costs that are considered in the development of standards reflecting the BSER for these emission sources.

### **1.2 Volume 2 - National Level Impacts**

Chapters 8 through Chapter 15 present the estimates of national level impacts needed to inform the Preamble of the final rule and the Regulatory Impact Analysis (RIA) for the rule, as required under Executive Order 12866. Specifically, each chapter summarizes the national baseline, nationwide emission reductions and cost impacts for use in the Preamble and RIA. It is important to note that that national impacts estimates incorporate in to the baseline the fact that some states already have requirements of emissions sources addressed by this final rule. Further, this analysis is separate and apart from the analyses required to identify the BSER based on which standards are to be established under section 111(b) of the CAA. Chapter 13 summarizes the natural gas savings from the application of emissions controls.

Finally, the Appendix to the TSD provides technical information on the background and development of the low pressure well equation.

# Attachment 5

U.S. EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: **Three Month Stay of Certain Requirements, Proposed Rule**, 82 Fed. Reg. 27,641 (June 16, 2017)

morning or afternoon, or before 11 a.m. or after 3 p.m.). We will attempt to accommodate each speaker's preference, but, if we are unable to do so, we will make the determination on a first-come first-served basis, based on the time and date the email was received. It is likely that each participant will be limited to five minutes. The Department will notify registrants of the location and time slot reserved for them. An individual may make only one presentation at the public hearings. If we receive more registrations than we are able to accommodate, the Department reserves the right to reject the registration of an entity or individual that is affiliated with an entity or individual that is already scheduled to present comments, and to select among registrants to ensure that a broad range of entities and individuals is allowed to present. We will accept walk-in registrations for any remaining time slots on a first-come first-served basis, beginning at 8:30 a.m. on the day of the public hearing at the Department's on-site registration table. Registration is not required to observe the public hearings; however, space may be limited.

The Department will post transcripts of the hearings to [www2.ed.gov/policy/highered/reg/hearulemaking/2017/index.html](http://www2.ed.gov/policy/highered/reg/hearulemaking/2017/index.html). Although the Department will not be videoing the hearings, as this is a public meeting, speakers should be aware that they may be filmed or recorded by members of the public.

Speakers may submit written comments at the public hearings. In addition, the Department will accept written comments via the Federal eRulemaking portal, and by postal mail, commercial delivery, or hand delivery, through July 12, 2017. (See the **ADDRESSES** section of this document for submission information.)

#### **Schedule for Negotiations**

We anticipate that any committees established after the public hearings will begin negotiations in November or December of 2017, with the committees meeting for up to three sessions of three to four days each at roughly five- to eight-week intervals. The committees will meet in the Washington, DC area. The dates and locations of these meetings will be published in a subsequent notice in the **Federal Register**, and will be posted on the Department's Web site at: [www2.ed.gov/policy/highered/reg/hearulemaking/2017/index.html](http://www2.ed.gov/policy/highered/reg/hearulemaking/2017/index.html).

**Accessible Format:** Individuals with disabilities can obtain this document in an accessible format (e.g., Braille, large print, audiotape, or compact disc) by

contacting Wendy Macias, U.S. Department of Education, 400 Maryland Ave. SW., Room 6C111, Washington, DC 20202. Telephone: (202) 203-9155 or by email: [Wendy.Macias@ed.gov](mailto:Wendy.Macias@ed.gov).

**Electronic Access to This Document:** The official version of this document is the document published in the **Federal Register**. Free internet access to the official edition of the **Federal Register** and the Code of Federal Regulations is available via the Federal Digital System at: [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys). At this site you can view this document, as well as all other documents of this Department published in the **Federal Register**, in text or Portable Document Format (PDF). To use PDF you must have Adobe Acrobat Reader, which is available free at the site. You may also access documents of the Department published in the **Federal Register** by using the article search feature at: [www.federalregister.gov](http://www.federalregister.gov). Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department.

**Program Authority:** 20 U.S.C. 1098a.

Dated: June 13, 2017.

**Kathleen A. Smith,**

*Acting Assistant Secretary for Postsecondary Education.*

[FR Doc. 2017-12555 Filed 6-14-17; 11:15 am]

BILLING CODE 4000-01-P

## **ENVIRONMENTAL PROTECTION AGENCY**

### **40 CFR Part 60**

**[EPA-HQ-OAR-2017-0346; FRL-9963-82-OAR]**

**RIN 2060-AT65**

### **Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to stay for three months certain requirements that are contained within the Final Rule titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources," published in the **Federal Register** on June 3, 2016 (2016 Rule). On June 5, 2017, the EPA published a notice that, in accordance with the Clean Air Act (CAA), the EPA stayed for three initial months the fugitive emissions requirements, well site pneumatic pump

standards, and requirements for certification of closed vent systems by a professional engineer. The EPA granted reconsideration after considering specific objections to these requirements. In a separate notice published today, the EPA is proposing a stay for two years, providing the EPA sufficient time to propose, take public comment, and issue a final action on the issues concerning the specific requirements on which EPA has granted reconsideration. The two-year proposed stay published today, if finalized as proposed, would likely be determined to be a major rule under the Congressional Review Act and therefore will not take effect until sixty days after publication or after Congress receives the rule report, whichever is later. Therefore, while the EPA intends to complete that rulemaking and take final action before the initial three-month stay expires, there may potentially be a gap between the two stays due to the sixty-day delay in effectiveness of that action. To avoid such a potential gap, and the resulting confusion, in this action the EPA is proposing a three-month stay which would not qualify as a major rule and could become effective upon publication. The EPA prepared an Economic Impact Analysis for this proposal, which is available in Docket ID EPA-HQ-OAR-2017-0346. The EPA is seeking comment pertaining to this stay and its duration. The EPA is also seeking comment on if a four-month stay may be more appropriate to ensure continuity of the stay. The EPA is not taking comment at this time on substantive issues concerning these requirements, or on any of the other provisions subject to the reconsideration.

**DATES:** Comments must be received on or before July 17, 2017. If a hearing is requested on this proposed rule, written comments must be received on or before August 9, 2017.

**Public Hearing.** A public hearing will be held, if requested by June 21, 2017, to accept oral comments on this proposed action. If a hearing is requested, it will be held at the EPA's Washington, DC campus located at 1201 Constitution Avenue NW., Washington, DC. The hearing, if requested, will begin at 9 a.m. (local time) and will conclude at 4 p.m. (local time) on July 10, 2017. To request a hearing, to register to speak at a hearing, or to inquire if a hearing will be held, please contact Aimee St. Clair at (919) 541-1063 or by email at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov).

Any updates made to any aspect of the hearing, including whether or not a hearing will be held, will be posted

Reply Attach. 23

online at <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/actions-and-notice-about-oil-and-natural-gas#regactions>. In addition, you may contact Aimee St. Clair at (919) 541-1063 or email at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov) with public hearing inquiries. The EPA does not intend to publish a notice in the **Federal Register** announcing any such updates. Please go to <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/actions-and-notice-about-oil-and-natural-gas#regactions> for more information on the public hearing.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2017-0346, to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** Mr. Peter Tsirigotis, Sector Policies and Programs Division (D205-01), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (888) 627-7764; email address: [airaction@epa.gov](mailto:airaction@epa.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **I. Background**

On June 3, 2016, the EPA published a final rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule,” at 81 FR 35824 (“2016 Rule”). The 2016 Rule establishes new source performance standards (NSPS) for greenhouse gas emissions and volatile organic compound (VOC)

emissions from the oil and natural gas sector. This rule addresses, among other things, fugitive emissions at well sites and compressor stations (“fugitive emissions requirements”) and emissions from pneumatic pumps. In addition, for a number of affected facilities (*i.e.*, centrifugal compressors, reciprocating compressors, pneumatic pumps, and storage vessels), the rule requires certification by a professional engineer of the closed vent system design and capacity, as well as any technical infeasibility determination relative to controlling pneumatic pumps at well sites. For further information on the 2016 Rule, see 81 FR 35824 (June 3, 2016) and associated Docket ID No. EPA-HQ-OAR-2010-0505.

On August 2, 2016, a number of interested parties submitted administrative petitions to the EPA seeking reconsideration of various aspects of the 2016 Rule pursuant to section 307(d)(7)(B) of the CAA (42 U.S.C. 7607(d)(7)(B)).<sup>1</sup> Those petitions include numerous objections relative to the fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification by professional engineer.

In accordance with section 307(d)(7)(B) of the CAA, the Administrator shall convene a reconsideration proceeding if, in the Administrator’s judgment, the petitioner raises an objection to a rule that was impracticable to raise during the comment period or if the grounds for the objection arose after the comment period but within the period for judicial review, and the objection is of central relevance to the outcome of the rule. The Administrator may stay the effectiveness of the rule for up to three months during such reconsideration.

*In a letter dated April 18, 2017, based on the criteria in CAA section 307(d)(7)(B), the Administrator convened a proceeding for reconsideration of the following objections relative to the fugitive emissions requirements:* (1) The process and criteria for requesting and receiving approval for the use of an alternative means of emission limitations (AMEL) for purposes of compliance with the fugitive emissions requirements in the 2016 Rule; and (2) the applicability of the fugitive emissions requirements to low production well sites.<sup>2</sup>

After issuing the April 18, 2017, letter, in a notice published June 5,

2017, the EPA identified objections to two other aspects of the 2016 Rule that meet the criteria for reconsideration under section 307(d)(7)(B) of the CAA. These objections relate to (1) the requirements for certification of closed vent system by professional engineer (“PE certification requirement”); and (2) the well site pneumatic pump standards. As part of the administrative reconsideration proceeding, the EPA will prepare a notice of proposed rulemaking that will provide the petitioners and the public an opportunity to comment on the fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification by professional engineer, and the issues associated with these requirements.

In the notice published June 5, 2017, the EPA stayed the fugitive emissions requirements, the well site pneumatic pumps requirements, and the requirements for certification of closed vent system by professional engineer for three months pursuant to section 307(d)(7)(B) of the CAA. That initial stay is effective from June 2, 2017, to August 31, 2017. When we have issued similar stays in the past, it has often been our practice to also propose a longer stay through a rulemaking process. See, *e.g.*, 74 FR 36427 (July 23, 2009).

In a separate action published today, the EPA is proposing to stay these requirements for two years. This proposed two-year stay will provide the EPA with sufficient time to propose, take public comment, and issue a final action on the issues concerning the specific requirements on which EPA has granted reconsideration. During the two year proposed stay, the EPA also plans to complete its reconsideration process for all remaining issues raised in these reconsideration petitions regarding fugitive emissions, pneumatic pumps, and certification by professional engineer requirements. For the reasons stated below, in this document the EPA is issuing a proposal to stay these requirements for three months. This stay would take effect upon the date of publication of the final rule in the **Federal Register**.

##### **II. The Proposed Action**

The two-year proposed stay published today, if finalized as proposed, would likely be determined to be a major rule under the Congressional Review Act and therefore under section 801 of that Act may not take effect until sixty days after publication or after Congress receives the rule report, whichever is later.

<sup>1</sup> Copies of these petitions are included in the docket for the 2016 Rule, Docket ID No. EPA-HQ-OAR-2010-0505.

<sup>2</sup> See Docket ID No. EPA-HQ-OAR-2010-0505-7730.



Therefore, while the EPA intends take final action on that rulemaking before the initial three-month stay of these requirements expires, there could potentially be a gap in the stay due to the sixty-day delay in the effectiveness of that action. Such a gap would create unnecessary burden and confusion as to what regulatory requirements are in effect and what regulated entities must do during the reconsideration proceeding. Therefore, to avoid such a potential gap, in this document the EPA is proposing a three-month stay, which is not a major rule under the CRA and could become effective upon publication. The EPA intends to publish the final rule on or before the expiration of the initial three-month stay.

Note that we are not taking comment at this time on substantive issues concerning these requirements, or on any of the other provisions subject to the reconsideration. This notice simply proposes to stay the specified requirements for three months. The EPA is seeking comment pertaining to this stay and its duration. Given the importance of not introducing a gap in the stay, the EPA is also requesting comment on whether a four-month stay may be appropriate. A separate **Federal Register** notice published in the near future will specifically solicit comment on substantive issues concerning these requirements.

### III. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www2.epa.gov/laws-regulations/laws-and-executive-orders>.

#### A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review because it raises novel legal or policy issues. Any changes made in response to OMB recommendations have been documented in the docket.

#### B. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing 40 CFR part 60, subpart OOOO and has assigned OMB control number 2060-0673. The information collection requirements in the final 40 CFR 60, subpart OOOOa have been submitted for approval to the OMB under the PRA. The Information Collection Request (ICR) document

prepared by EPA has been assigned EPA ICR 2523.01. This action does not result in changes to the approved ICR for subpart OOOO or the submitted ICR for subpart OOOOa, so the information collection estimates of project cost and hour burdens have not been revised.

#### C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action proposes a limited stay for certain requirements. This proposed stay will not increase the burden on small entities subject to this rule. The EPA prepared a final RFA analysis for the 2016 Rule, which is available as part of the Regulatory Impact Analysis in the docket at Docket ID No. EPA-HQ-OAR-2010-0505-7630. We have therefore concluded that this action will have no net regulatory burden for all directly regulated small entities.

#### D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

#### E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

#### F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175.

Thus, Executive Order 13175 does not apply to this action.

#### G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This action is subject to Executive Order 13045 because it is a significant regulatory action as defined by Executive Order 12866, and the EPA believes that the environmental health or safety risk addressed by this action may have a disproportionate effect on children. Because this action merely proposes to delay action and does not change the requirements of the final rule, this action will not change any impacts of the rule when it is fully implemented. Any impacts on children's health caused by the delay in the rule will be limited, because the length of the proposed stay is limited. The agency therefore believes it is more appropriate to consider the impact on children's health in the context of any substantive changes proposed as part of reconsideration.

#### H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. The basis for this determination can be found in the 2016 Rule (81 FR 35894).

#### I. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

#### J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Because this action merely proposes to delay action and does not change the requirements of the final rule, this action will not change any impacts of the rule when it is fully implemented. Any impacts on minority populations and low-income populations caused by the delay in the rule will be limited, because the length of the proposed stay is limited. The agency therefore believes it is more appropriate to consider the impact on minority populations and low-income populations in the context of any substantive changes proposed as part of reconsideration.

#### List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping.

Dated: June 12, 2017.  
 E. Scott Pruitt,  
 Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

**PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES**

■ 1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

**Subpart OOOOa—[AMENDED]**

■ 2. Section 60.5393a is amended by:

■ a. Staying paragraphs (b) and (c) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**]; and

b. Adding paragraph (f).

The addition reads as follows:

**§ 60.5393a What GHG and VOC standards apply to pneumatic pump affected facilities?**

\* \* \* \* \*

(f) Pneumatic pumps at a well site are not subject to the requirements of paragraphs (d) and (e) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

**§ 60.5397a [AMENDED]**

3. Section 60.5397a is stayed from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

4. Section 60.5410a is amended by:

a. Staying paragraphs (e)(2) through (5) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**];

b. Adding paragraph (e)(8); and

c. Staying paragraph (j) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The addition reads as follows:

**§ 60.5410a How do I demonstrate initial compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, collection of fugitive emissions components at a compressor station, and equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?**

\* \* \* \* \*

(e) \* \* \*

(8) Pneumatic pump affected facilities at a well are not subject to the requirements of paragraphs (e)(6) and (7) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

■ 5. Section 60.5411a is amended by:

■ a. Revising the introductory text;

■ b. Staying paragraph (d) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**]; and

■ c. Adding paragraph (e).

The revision and addition read as follows:

**§ 60.5411a What additional requirements must I meet to determine initial compliance for my covers and closed vent systems routing emissions from centrifugal compressor wet seal fluid degassing systems, reciprocating compressors, pneumatic pumps and storage vessels?**

You must meet the applicable requirements of this section for each cover and closed vent system used to comply with the emission standards for your centrifugal compressor wet seal degassing systems, reciprocating compressors, pneumatic pumps and storage vessels except as provided in paragraph (e) of this section.

\* \* \* \* \*

(e) Pneumatic pump affected facilities at a well site are not subject to the requirements of paragraph (a) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

6. Section 60.5415a is amended by:

a. Revising paragraph (b) introductory text and adding paragraph (b)(4); and

b. Staying paragraph (h) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The revision and addition read as follows:

**§ 60.5415a How do I demonstrate continuous compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, and collection of fugitive emissions components at a compressor station affected facilities, and affected facilities at onshore natural gas processing plants?**

\* \* \* \* \*

(b) For each centrifugal compressor affected facility and each pneumatic pump affected facility, you must demonstrate continuous compliance according to paragraph (b)(3) of this section except as provided in paragraph (b)(4) of this section. For each centrifugal compressor affected facility, you also must demonstrate continuous compliance according to paragraphs (b)(1) and (2) of this section.

\* \* \* \* \*

(4) Pneumatic pump affected facilities at a well site are not subject to the requirements of paragraph (b)(3) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

7. Section 60.5416a is amended by revising the introductory text and adding paragraph (d) to read as follows:

**§ 60.5416a What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my centrifugal compressor, reciprocating compressor, pneumatic pump, and storage vessel affected facilities?**

For each closed vent system or cover at your storage vessel, centrifugal compressor, reciprocating compressor and pneumatic pump affected facilities, you must comply with the applicable requirements of paragraphs (a) through (c) of this section, except as provided in paragraph (d) of this section.

\* \* \* \* \*

(d) Pneumatic pump affected facilities at a well site are not subject to the requirements of paragraphs (a) and (b) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

8. Section 60.5420a is amended by:

a. Revising paragraph (b) introductory text;

b. Staying paragraphs (b)(7), (8), and (12) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**];

c. Adding paragraph (b)(13); and  
d. Staying paragraphs (c)(15) through (17) from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

The revision and addition read as follows:

**§ 60.5420a What are my notification, reporting, and recordkeeping requirements?**

\* \* \* \* \*

(b) *Reporting requirements.* You must submit annual reports containing the information specified in paragraphs (b)(1) through (8) and (12) of this section and performance test reports as specified in paragraph (b)(9) or (10) of this section, if applicable, except as provided in paragraph (b)(13) of this section. You must submit annual reports following the procedure specified in paragraph (b)(11) of this section. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to § 60.5410a. Subsequent annual reports are due no later than same date each year as the initial annual report. If you own or operate more than one affected facility, you may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) through (8) of this section, except as provided in paragraph (b)(13) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. You may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

\* \* \* \* \*

(13) The collection of fugitive emissions components at a well site (as defined in § 60.5430a), the collection of fugitive emissions components at a compressor station (as defined in § 60.5430a), and pneumatic pump affected facilities at a well site (as defined in § 60.5365a(h)(2)) are not subject to the requirements of paragraph (b)(1) of this section from [DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**] until [DATE 90 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE **Federal Register**].

\* \* \* \* \*

[FR Doc. 2017-12473 Filed 6-15-17; 8:45 am]

BILLING CODE 6560-50-P

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 60**

[EPA-HQ-OAR-2010-0505; FRL-9963-36-OAR]

RIN 2060-AT59

**Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to stay for two years certain requirements that are contained within the Final Rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources,” published in the **Federal Register** on June 3, 2016 (2016 Rule). On June 5, 2017, the EPA published a notice that it stayed for three months the; fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification of closed vent systems by a professional engineer in accordance with the Clean Air Act (CAA). The EPA has granted reconsideration based on specific objections to these requirements. The proposed stay discussed in this action, which follows the three-month stay, would provide the EPA sufficient time to propose, take public comment, and issue a final action on the issues concerning the specific requirements on which EPA has granted reconsideration. During this time, the EPA also plans to complete its reconsideration process for all remaining issues raised in these reconsideration petitions regarding fugitive emissions, pneumatic pumps, and certification by professional engineer requirements. The EPA acknowledges that the administrative reconsideration petitions include additional issues regarding these three requirements other than the issues for which we specifically have granted reconsideration. In addition, since the publication of the 2016 Rule, the EPA has received numerous questions relative to the implementation of these three requirements. During the reconsideration proceeding, the EPA intends to look broadly at the entire 2016 Rule. The EPA believes that addressing all of these issues at the same time would provide clarity and certainty for the public and the regulated community with regard to these requirements. The EPA is seeking

comment pertaining to this stay and its duration and impact. The EPA is not taking comment at this time on substantive issues concerning these requirements, or on any of the other provisions subject to the reconsideration.

**DATES:** Comments must be received on or before July 17, 2017. If a hearing is requested on this proposed rule, written comments must be received on or before August 9, 2017.

**Public Hearing.** A public hearing will be held, if requested by June 21, 2017, to accept oral comments on this proposed action. If a hearing is requested, it will be held at the EPA’s Washington, DC campus located at 1201 Constitution Avenue NW., Washington, DC. The hearing, if requested, will begin at 9 a.m. (local time) and will conclude at 4 p.m. (local time) on July 10, 2017. To request a hearing, to register to speak at a hearing, or to inquire if a hearing will be held, please contact Aimee St. Clair at (919) 541-1063 or by email at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov).

Any updates made to any aspect of the hearing, including whether or not a hearing will be held, will be posted online at <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/actions-and-notices-about-oil-and-natural-gas#regactions>. In addition, you may contact Aimee St. Clair at (919) 541-1063 or email at [stclair.aimee@epa.gov](mailto:stclair.aimee@epa.gov) with public hearing inquiries. The EPA does not intend to publish a notice in the **Federal Register** announcing any such updates. Please go to <https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/actions-and-notices-about-oil-and-natural-gas#regactions> for more information on the public hearing.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2010-0505, to the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment

Reply Attach. 27

# Attachment 6

U.S. EPA, **Regulatory Impact Analysis** of the Final Oil and Natural Gas Sector:  
Emission Standards for New, Reconstructed, and Modified Sources (May 2016)  
(excerpts)



# **Regulatory Impact Analysis of the Final Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources**

programs be performed annually at the affected newly drilled or refractured oil and natural gas well sites, and semiannually at new or modified gathering and boosting stations and new or modified transmission and storage compressor stations. Fewer surveys being performed leads to lower costs and emissions reductions than under the selected Option 2. Finally, the more stringent Option 3 requires quarterly monitoring for all sites under the fugitive emissions program. More frequent surveys result in higher costs and higher emissions reductions than Option 2.

### ***3.4.2 Projection of Incrementally Affected Facilities***

The second step in estimating national costs and emissions impacts of the final rule is projecting the number of incrementally affected facilities. Incrementally affected facilities are facilities that would be expected to change their emissions control activities as a result of the NSPS. Facilities in states with similar state-level requirements and facilities with only recordkeeping requirements are not included within incrementally affected facilities.

The years of analysis are 2020, to represent the near-term impacts of the rule, and 2025, to represent impacts of the rule over a longer period. Therefore, the emissions reductions, benefits, and costs by 2020 and 2025 (i.e., including all emissions reductions, costs, and benefits in all years from 2016 to 2025) would be potentially significantly greater than the estimated emissions reductions, benefits, and costs provided within this rule. Affected facilities are facilities that are new or modified since the proposal in September 2015. In 2020, affected facilities are those that are newly established or modified in 2020, as well as those that have accumulated between 2016 and 2019. Over time, more facilities are newly established or modified in each year, and to the extent the facilities remain in operation in future years, the total number of facilities subject to the NSPS accumulates. In 2025, affected facilities include facilities newly established or modified in 2025, and also facilities which were newly established or modified from 2016 through 2024 and are still operating in 2025. The analysis has assumed that all new equipment and facilities established from 2016 through 2024 are still in operation in 2025. This approach differs from the way affected facilities were estimated in the proposal RIA. At proposal, 2020 was assumed to represent a single year of potential impacts, and 2025 included newly established or modified facilities from 2020 through 2024. This methodological

change results in a higher estimate of the number of affected facilities than at proposal and better represents the impacts of the rule.

The EPA has projected affected facilities using a combination of historical data from the U.S. GHG Inventory, and projected activity levels taken from the Energy Information Administration (EIA) Annual Energy Outlook (AEO). The EPA derived typical counts for new compressors, pneumatic controllers, and pneumatic pumps by averaging the year-to-year changes over the past ten years in the GHG Inventory. New and modified hydraulically fractured oil well completions and wellsites are based on projections and growth rates consistent with the drilling activity in the Annual Energy Outlook. For the final RIA, the projections have been updated to reflect the projections in the 2015 Annual Energy Outlook. In addition, while the projections used in the proposal RIA were based on the long-term growth trajectory from 2012 to 2025, the current analysis is based on the full times series in the 2015 AEO reference scenario.

The 2015 Annual Energy Outlook was the most recent projection available at the time the analysis underlying this RIA was being prepared. The 2015 AEO includes the growth in U.S. crude oil production over the last two years, along with the late-2014 drop in global crude oil prices, and reflects how these factors have altered the economics of the oil market. In comparison to the 2014 AEO reference case, the 2015 AEO reference case shows higher crude oil production (18 percent higher for 2025 in the 2015 AEO), slightly lower natural gas production (about 4 percent lower for 2025 in the 2015 AEO), lower Brent spot and West Texas Intermediate crude oil prices, and lower total wells drilled in the lower 48 states (about 20 percent lower for 2025 in the 2015 AEO).

While it is desirable to analyze impacts beyond 2025 in this RIA, the EPA has chosen not to largely because of the limited information available on the turnover rate of emissions sources and controls. For this RIA, we have used the U.S. EIA's National Energy Modelling System (NEMS) to generate a limited set of future year projections to inform impact estimates for subset of affected sources. We also used the model to estimate key market impacts of the rules, based upon EPA's parameterization of regulatory costs and natural gas capture in the model. While NEMS produces highly regarded projections of production and well drilling, and is useful to estimate market impacts of the NSPS, it is not a compliance model and does not directly model

affected units. In addition, in a dynamic industry like oil and natural gas, technological progress in control technology is also likely to be dynamic. These factors make it reasonable to use 2025 as the latest year of analysis as extending the analysis beyond 2025 would introduce substantial and increasing uncertainties in projected impacts of the NSPS.

We also reviewed state regulations and permitting requirements which require mitigation measures for many emission sources in the oil and natural gas sector. State regulations in Colorado and Wyoming both require RECs for hydraulically fractured oil and gas wells, and North Dakota requires combustion of completion emissions. Sources in Colorado, Wyoming, Utah, and Ohio are subject to fugitive emissions requirements. Applicable facilities in these states are not included in the estimates of incrementally affected facilities presented in the RIA, as sources in those states are already subject to similar requirements to the federal standards. This means that any additional costs and benefits incurred by facilities in these states to comply with the federal standards beyond the state requirements (e.g., to comply with the on-site separator requirement) are not reflected in this RIA. A more detailed discussion on the derivation of the baseline for this rule is presented for each emissions source in the TSD. In section 4.3.1 of the TSD, Table 4-3 provides a detailed breakout of affected oil well completions.

**Table 3-2 Incrementally Affected Sources under Final NSPS, 2016 to 2025 on an Annual Basis**

| Emissions Sources                      | Incrementally Affected Sources <sup>1</sup> |        |        |        |        |        |        |        |        |        |
|----------------------------------------|---------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                        | 2016                                        | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   | 2023   | 2024   | 2025   |
| Oil Well Completions and Recompletions | 13,000                                      | 13,000 | 13,000 | 13,000 | 13,000 | 13,000 | 13,000 | 13,000 | 14,000 | 14,000 |
| Fugitive Emissions                     | 19,000                                      | 19,000 | 19,000 | 19,000 | 19,000 | 19,000 | 19,000 | 20,000 | 20,000 | 21,000 |
| Pneumatic Pumps                        | 790                                         | 790    | 790    | 790    | 790    | 790    | 790    | 790    | 790    | 790    |
| Compressors                            | 33                                          | 33     | 33     | 33     | 33     | 33     | 33     | 33     | 33     | 33     |
| Pneumatic Controllers                  | 96                                          | 96     | 96     | 96     | 96     | 96     | 96     | 96     | 96     | 96     |
| Total                                  | 32,000                                      | 32,000 | 33,000 | 33,000 | 33,000 | 33,000 | 33,000 | 34,000 | 35,000 | 35,000 |

<sup>1</sup> Incrementally affected sources includes sources that have to change their control activity as a result of the rule. The table does not include estimate counts of a) affected facilities in states with similar state-level requirements to the NSPS, b) facilities with only recordkeeping requirements, or c) replacement or modification of existing sources except in the case of oil well completions and fugitive emissions at wellsites.

Table 3-2 presents the number of affected sources for each year of analysis after generally accounting for state regulations. In addition to the caveats regarding facilities affected by state regulations described above, facilities with only recordkeeping requirements are also not



included within incrementally affected facilities (e.g., wells with low GOR are not included in the estimate of facilities affected by the oil well completion requirements).

**Table 3-3 Total Number of Affected Sources for the NSPS in 2020 and 2025**

| Emissions Sources                                             | Affected Sources <sup>1</sup> |                     |
|---------------------------------------------------------------|-------------------------------|---------------------|
|                                                               | 2020                          | 2025                |
| Hydraulically Fractured and Re-fractured Oil Well Completions | 13,000 <sup>3</sup>           | 14,000 <sup>3</sup> |
| Fugitive Emissions                                            | 94,000                        | 190,000             |
| Pneumatic Pumps                                               | 3,900                         | 7,900               |
| Compressors                                                   | 170                           | 330                 |
| Pneumatic Controllers                                         | 480                           | 960                 |
| Total <sup>2</sup>                                            | 110,000                       | 220,000             |

<sup>1</sup> In addition to newly affected sources in 2020, total affected sources in 2020 include sources that become affected in the 2016-2019 period and are assumed to be in continued operation in 2020. Similarly, affected sources in 2025 reflect sources newly constructed or modified from 2016 to 2025, assumed to still be in operation in 2025. The table does not include estimate counts of: a) affected facilities in states already regulating those sources, b) facilities with only recordkeeping requirements, or c) replacement or modification of existing sources except for oil well completions and fugitive emissions at wellsites. Estimates are rounded to two significant digits.

<sup>2</sup> Totals may not sum due to independent rounding.

<sup>3</sup> Affected oil well completions include a mix of RECs and flaring based on subcategory and technical infeasibility criteria. Exploratory and delineation wells are required to combust emissions. Of development oil well completions, 50% are estimated to be feasible to perform a REC; the remainder would combust emissions (either because they are unable to implement a REC due to low pressure or other technical infeasibility reasons). See section 4.3.1 of the TSD for a detailed breakout of affected oil well completions

Table 3-3 presents estimates of the total number of affected sources for this final rule. Note that hydraulically fractured and re-fractured oil well completions do not grow significantly from 2020 to 2025, while other sources do. This is a result of completions being a one-time activity in a given year, while other sources are affected and remain affected as they continue to operate, thus these sources accumulate over time. The estimates for hydraulically fractured and re-fractured oil well completions and fugitive emissions at wellsites (a large fraction of the incrementally affected sources under the fugitive emissions provisions) include both new and modified sources.

The estimates for other sources are based upon projections of new sources alone, and do not include replacement or modification of existing sources. While some of these sources are unlikely to be modified, particularly pneumatic pumps and controllers, the impact estimates may be under-estimated due to the focus on new sources. In the proposal, the EPA solicited comments on these projection methods as well as solicits information that would improve our

estimate of the turnover rates or rates of modification of relevant sources, as well as the number of wells on wellsites. While the EPA received comments on the projection methods used in the proposal RIA, we did not receive comments with sufficient information to further incorporate modification and turnover in the projection methodologies. The EPA has modified its methodology for using historical inventory information to estimate new sources reflecting comments received, resulting in lower estimates of the number of new compressor stations, pumps, compressors, and pneumatic controllers constructed each year. Newly constructed affected facilities are estimated based on averaging the year-to-year changes in the past 10 years of activity data in the Greenhouse Gas Inventory for compressor stations, pneumatic pumps, compressors, and pneumatic controllers. At proposal, this was done by averaging the increasing years only. The approach was modified to average the number of newly constructed units in all years. In years when the total count of equipment decreased, there were assumed to be no newly constructed units.

### ***3.4.3 Emissions Reductions***

Table 3-4 summarizes the national emissions reductions for the evaluated NSPS emissions sources and points for 2020 and 2025. These reductions are estimated by multiplying the unit-level emissions reductions associated with each applicable control and facility type by the number of incrementally affected sources. The detailed description of emissions controls is provided in the TSD. Please note that all results have been rounded to two significant digits.

## 4.2 Emission Reductions from the Final NSPS

As described in Section 2 of this RIA, oil and natural gas operations in the U.S. include a variety of emission points for methane, VOC, and HAP, including wells, wellsites, processing plants, compressor stations, storage equipment, and transmission and distribution lines. These emission points are located throughout much of the country with significant concentrations in particular regions. For example, wells and processing plants are largely concentrated in the South Central, Midwest, and Southern California regions of the U.S., whereas gas compression stations are located all over the country. Distribution lines to customers are frequently located within areas of high population density.

In implementing this rule, emission controls may lead to reductions in ambient PM<sub>2.5</sub> and ozone below the National Ambient Air Quality Standards (NAAQS) in some areas and assist other areas with attaining the NAAQS. Due to the high degree of variability in the responsiveness of ozone and PM<sub>2.5</sub> formation to VOC emission reductions, we are unable to determine how this rule might affect attainment status without air quality modeling data.<sup>24</sup> Because the NAAQS RIAs also calculate ozone and PM benefits, there are important differences worth noting in the design and analytical objectives of each RIA. The NAAQS RIAs illustrate the potential costs and benefits of attaining a new air quality standard nationwide based on an array of emission control strategies for different sources.<sup>25</sup> By contrast, the emission reductions for implementation rules, including this rule, are generally from a specific class of well-characterized sources. In general, the EPA is more confident in the magnitude and location of the emission reductions for implementation rules rather than illustrative NAAQS analyses. Emission reductions achieved under these and other promulgated rules will ultimately be reflected in the baseline of future NAAQS analyses, which would reduce the incremental costs and benefits associated with attaining future NAAQS.

---

<sup>24</sup> The responsiveness of ozone and PM<sub>2.5</sub> formation is discussed in greater detail in sections 4.4.1 and 4.5.1 of this RIA.

<sup>25</sup> NAAQS RIAs hypothesize, but do not predict, the control strategies States may choose to enact when implementing a NAAQS. The setting of a NAAQS does not directly result in costs or benefits, and as such, the NAAQS RIAs are merely illustrative and are not intended to be added to the costs and benefits of other regulations that result in specific costs of control and emission reductions. However, some costs and benefits estimated in this RIA may account for the same air quality improvements as estimated in an illustrative NAAQS RIA.

**Table 6-13 Estimates of Labor Required to Comply with NSPS for Hydraulically Fractured Oil Well Completions, 2020 and 2025**

| <b>Emissions Source/Control</b>                                       | <b>Projected No. of Incrementally Affected Units (2020)</b> | <b>Per Unit One-time Labor Estimate (hours)</b> | <b>Per Unit Annual Labor Estimate (hours)</b> | <b>Total One-Time Labor Estimate (hours)</b> | <b>Total Annual Labor Estimate (hours)</b> | <b>One-time FTE</b> | <b>Annual FTE</b> |
|-----------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|----------------------------------------------|--------------------------------------------|---------------------|-------------------|
| <b>2020</b>                                                           |                                                             |                                                 |                                               |                                              |                                            |                     |                   |
| <b>Hydraulically Fractured Oil Well Completions and Recompletions</b> |                                                             |                                                 |                                               |                                              |                                            |                     |                   |
| Completions where REC and completion combustion is required           | 7,500                                                       | 0                                               | 93                                            | 0                                            | 700,000                                    | 0                   | 340               |
| Completions where completion combustion is required                   | 5,600                                                       | 0                                               | 9                                             | 0                                            | 53,000                                     | 0                   | 25                |
| <b>Total</b>                                                          | <b>13,000</b>                                               | <b>N/A</b>                                      | <b>N/A</b>                                    | <b>0</b>                                     | <b>760,000</b>                             | <b>0</b>            | <b>360</b>        |
| <b>2025</b>                                                           |                                                             |                                                 |                                               |                                              |                                            |                     |                   |
| <b>Hydraulically Fractured Oil Well Completions and Recompletions</b> |                                                             |                                                 |                                               |                                              |                                            |                     |                   |
| Completions where REC and completion combustion is required           | 8,000                                                       | 0                                               | 93                                            | 0                                            | 750,000                                    | 0                   | 360               |
| Completions where completion combustion is required                   | 6,000                                                       | 0                                               | 9                                             | 0                                            | 57,000                                     | 0                   | 27                |
| <b>Total</b>                                                          | <b>14,000</b>                                               | <b>N/A</b>                                      | <b>N/A</b>                                    | <b>0</b>                                     | <b>800,000</b>                             | <b>0</b>            | <b>390</b>        |

Note: Full-time equivalents (FTE) are estimated by first multiplying the projected number of affected units by the per-unit labor requirements and then multiplying by 2,080 (40 hours multiplied by 52 weeks). Totals may not sum due to independent rounding.

Table 6-14 presents estimates of labor requirements for fugitive emissions. Consistent with the cost estimates for fugitive emissions presented in Section 5 of the TSD, we estimate labor associated with company-level activities and activities at field sites. Company-level activities include one-time activities such as planning the company's fugitive emissions program and annual requirements such as reporting and recordkeeping. Field-level activities include semiannual inspection and repair of leaks. It is important to note, however, that the compliance costs estimates for leak inspection were based upon an estimate of the costs to hire a contractor to provide the inspection service, but the source providing this information does not have a breakdown of the labor component of the rental cost. As a result, the labor requirements for the fugitives program remain uncertain.

**Table 6-14 Estimates of Labor Required to Comply with NSPS for Fugitive Emissions, 2020 and 2025**

| Emissions Source                        | Emissions Control          | Projected No. of Incrementally Affected Units (2020) | Per Unit One-time Labor Estimate (hours) | Per Unit Annual Labor Estimate (hours) | Total One-Time Labor Estimate (hours) | Total Annual Labor Estimate (hours) | One-time FTE | Annual FTE   |
|-----------------------------------------|----------------------------|------------------------------------------------------|------------------------------------------|----------------------------------------|---------------------------------------|-------------------------------------|--------------|--------------|
| <b>2020</b>                             |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| <b>Well Sites</b>                       |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 4,300                                                | 120                                      | 0.0                                    | 500,000                               | 0                                   | 240          | 0            |
| Site-level                              | Monitoring and Maintenance | 94,000                                               | 0.0                                      | 14                                     | 0                                     | 1,300,000                           | 0            | 640          |
| <b>Gathering and Boosting Stations</b>  |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 480                                                  | 120                                      | 0.0                                    | 57,000                                | 0                                   | 27           | 0            |
| Site-level                              | Monitoring and Maintenance | 480                                                  | 0.0                                      | 110                                    | 0                                     | 52,000                              | 0            | 25           |
| <b>Transmission Compressor Stations</b> |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 20                                                   | 120                                      | 0.0                                    | 2,400                                 | 0                                   | 1            | 0            |
| Site-level                              | Monitoring and Maintenance | 20                                                   | 0.0                                      | 110                                    | 0                                     | 2,100                               | 0            | 1            |
| <b>Storage Compressor Stations</b>      |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 25                                                   | 120                                      | 0.0                                    | 3,000                                 | 0                                   | 1            | 0            |
| Site-level                              | Monitoring and Maintenance | 25                                                   | 0.0                                      | 210                                    | 0                                     | 5,300                               | 0            | 3            |
| <b>Total</b>                            |                            | <b>94,000</b>                                        | <b>N/A</b>                               | <b>N/A</b>                             | <b>560,000</b>                        | <b>1,400,000</b>                    | <b>270</b>   | <b>660</b>   |
| <b>2025</b>                             |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| <b>Well Sites</b>                       |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 4,300                                                | 120                                      | 0.0                                    | 500,000                               | 0                                   | 240          | 0            |
| Site-level                              | Monitoring and Maintenance | 190,000                                              | 5.4                                      | 14                                     | 0                                     | 2,700,000                           | 0            | 1,300        |
| <b>Gathering and Boosting Stations</b>  |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 480                                                  | 120                                      | 0.0                                    | 57,000                                | 0                                   | 27           | 0            |
| Site-level                              | Monitoring and Maintenance | 960                                                  | 0.0                                      | 110                                    | 0                                     | 100,000                             | 0            | 50           |
| <b>Transmission Compressor Stations</b> |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 20                                                   | 120                                      | 0.0                                    | 2,400                                 | 0                                   | 1            | 0            |
| Site-level                              | Monitoring and Maintenance | 40                                                   | 0.0                                      | 110                                    | 0                                     | 4,300                               | 0            | 2            |
| <b>Storage Compressor Stations</b>      |                            |                                                      |                                          |                                        |                                       |                                     |              |              |
| Company-level                           | Planning                   | 25                                                   | 120                                      | 0.0                                    | 3,000                                 | 0                                   | 1            | 0            |
| Site-level                              | Monitoring and Maintenance | 50                                                   | 0.0                                      | 210                                    | 0                                     | 11,000                              | 0            | 5            |
| <b>Total</b>                            |                            | <b>190,000</b>                                       | <b>N/A</b>                               | <b>N/A</b>                             | <b>560,000</b>                        | <b>2,800,000</b>                    | <b>270</b>   | <b>1,400</b> |

Note: Full-time equivalents (FTE) are estimated by first multiplying the projected number of affected units by the per unit labor requirements and then multiplying by 2,080 (40 hours multiplied by 52 weeks). Totals may not sum due to independent rounding.

# Attachment 7

**Letter from E. Scott Pruitt**, Administrator, U.S. EPA,  
to Doug Ducey, Governor, Arizona (June 6, 2017)



E. SCOTT PRUITT  
ADMINISTRATOR

June 6, 2017

The Honorable Doug Ducey  
Governor of Arizona  
State Capitol  
1700 W. Washington Street  
Phoenix, AZ 85007

Dear Governor Ducey:

I am writing to update you on the status of the U.S. Environmental Protection Agency's efforts related to the National Ambient Air Quality Standards (NAAQS) for ozone promulgated in October 2015. Pursuant to section 107(d)(1)(B) of the Clean Air Act (CAA), I am extending the deadline for promulgating initial area designations for the 2015 ozone NAAQS by one year. I have determined that there is insufficient information, and taking additional time is appropriate in order to consider completely all designation recommendations provided by state governors pursuant to CAA section 107(d)(1)(A) and to rely fully on the most recent air quality data. This additional time will also provide the Agency time to complete its review of the 2015 ozone NAAQS, prior to taking this initial implementation step.

Although the new ozone standard was set on October 1, 2015, there remains a host of complex issues that could undermine associated compliance efforts by states, localities and regulated entities. As part of the review process, the Agency is evaluating these issues primarily focusing on: fully understanding the role of background ozone levels; appropriately accounting for international transport; and, timely consideration of exceptional events demonstrations. Additionally, pursuant to language in the recently-enacted FY 2017 omnibus bill, I have established an Ozone Cooperative Compliance Task Force to develop additional flexibilities for states to comply with the ozone standard.

States have made tremendous progress and significant investment cleaning up the air. Since 1980, total emissions of the six principal air pollutants have dropped by 63 percent and ozone levels have declined by 33 percent. Despite the continued improvement of air quality, costs associated with compliance of the ozone NAAQS have significantly increased. I am committed to working with you and your local officials to effectively implement the ozone standard in a manner that is supportive of your air quality improvement efforts, without interfering with local decisions or impeding economic growth.

I appreciate the information you and your staff have shared with EPA already as part of this process. I am confident this progress will continue as we work together towards our shared goal of clean air, a robust economy and stronger, healthier communities. If you have questions or concerns, please contact me or your staff may contact Troy Lyons, Associate Administrator for the Office of Congressional and Intergovernmental Relations, at [lyons.troy@epa.gov](mailto:lyons.troy@epa.gov) or (202) 564-4987.

Respectfully yours,



E. Scott Pruitt



# Attachment 8

**API, Comments on the Proposed Rulemaking** – Standards of Performance for New Stationary Sources: Oil and Natural Gas Production and Natural Gas Transmission and Distribution (Dec. 4, 2015) (excerpts)



**Howard J. Feldman**  
**Senior Director, Regulatory and Scientific Affairs**

1220 L Street, NW  
Washington, DC 20005-4070 USA

202-682-8340  
[Feldman@api.org](mailto:Feldman@api.org)  
[www.api.org](http://www.api.org)

December 4, 2015

The Honorable Gina McCarthy, Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460

**Attention: Docket ID Number EPA-OAR-2010-0505**

*Submitted to the Federal eRulemaking Portal ([www.regulations.gov](http://www.regulations.gov))*

**Re: Environmental Protection Agency's (EPA's) "Oil and Natural Gas Sector: Emission Standards for New and Modified Sources" at 80 FR 56593 (September 18, 2015)**

Dear Administrator McCarthy:

American Petroleum Institute (API) respectfully submits the attached comments on the Environmental Protection Agency's (EPA's) "Oil and Natural Gas Sector: Emission Standards for New and Modified Sources" at 80 FR 56593 (September 18, 2015).

API represents over 625 oil and natural gas companies, leaders of a technology-driven industry that supplies most of America's energy, supports more than 9.8 million jobs and 8 percent of the U.S. economy, and, since 2000, has invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives. Collectively, they provide most of the nation's energy and many will be directly impacted by the proposed regulations.

The proposed rule is part of the President's "Methane Strategy," which includes multiple regulations and programs from several different agencies, intended to further reduce greenhouse gas emissions from oil and natural gas operations. However, it's important to take into account the recent methane emission trends associated with our industry. Even as U.S. oil and natural gas production has surged, methane emissions have declined significantly. For example, EPA's GHG inventory shows methane emissions from hydraulically-fractured natural gas wells have fallen nearly 79 percent since 2005 and total methane emissions from natural gas systems are down 11 percent over the same period. According to the Energy Information Agency, these reductions have occurred during a time when total U.S. gas production has increased 44% and, as a result of the increased use of natural gas, CO2 emissions from the energy sector are now near 20-year lows. These trends are indicative of what our industry, when given the freedom to innovate, can achieve to improve the environment as we bolster our nation's energy security.

Reply Attach. 42

Each of the proposals (Control Techniques Guidelines, Source Determination, Minor Source Tribal NSR), including this one, has potentially significant impacts on our industry's operations and, collectively, they have the potential to hinder our ability to continue providing the energy our nation demands. These cumulative impacts must be considered in conjunction with the impacts of the lowered ozone standards and the pending Bureau of Land Management (BLM) methane rule, which has not yet been proposed and will likely require costly methane controls for some of the very same emission sources. Our organizations have collaborated well in the past and API remains committed to working with EPA and the Administration to identify emission control opportunities that are both cost-effective and, when implemented, don't impact safety or hinder our ability to provide the energy our nation will continue to demand for many years to come. Attached are our comments on the "Oil and Natural Gas Sector: Emission Standards for New and Modified Sources" as well as an executive summary.

As we noted in our comment extension request, we again request that EPA officially re-open the docket for all three rulemakings when the proposed BLM methane rule is published in the Federal Register, to allow additional time for public comment once its interrelationship with the EPA proposed regulations can be fully analyzed. Also, given the limited comment period and minimal extension for these complex proposals, API will continue its review and, if warranted, provide supplemental comments to the agency that we request be included in the appropriate docket to protect the record and considered before finalizing the rules.

We look forward to working with you and your staff as these rules are developed. If you have any questions regarding the content of these comments, please contact Matthew Todd ([toddm@api.org](mailto:toddm@api.org), 202-682-8319).

Sincerely,



Howard J. Feldman

Cc: Janet McCabe, EPA  
Joe Goffman, EPA  
Peter Tsirigotis, EPA  
David Cozzie, EPA  
Bruce Moore, EPA  
Cheryl Vetter, EPA  
Chris Stoneman, EPA  
Charlene Spells, EPA

Attachment

equivalent (boe) per day averaged over the first 30 days of production, is not an affected facility under this subpart.” In the preamble, EPA solicited comment on the air emissions associated with low production wells, and the relationship between production and fugitive emissions, specifically on the relationship between production and fugitive emissions over time. EPA also solicited comment on the appropriateness of this threshold for applying the standards for fugitive emission at well sites, in addition to whether EPA should include low production well sites for fugitive emissions and if these types of well sites are not excluded, should they have a less frequent monitoring requirement.

Fugitive emissions do not correlate to production. A production rate gives no indication of the type or number of equipment that are located at the site. In addition, this exemption is irrelevant for new well sites which would not be economical to produce at 15 BOE/day. As stated in our comment above (see 27.2.3), this exemption should also be considered as an off-ramp to §60.5397a applicability or exemption in the rare event of a modification to a stripper well. However, API believes it more appropriate and would prefer that the rule be based on the process equipment located at the site rather than a low production rate since fugitive emissions are based simply on the number of components associated with the process equipment. As indicated in sections 27.2.6 and 0, API believes that sites with equipment configurations or component counts less than the model plants should be exempt from the LDAR requirements, as based on EPA’s analysis, LDAR is not cost effective at sites with fewer equipment/components.

#### **27.2.5 The Definition Of Well Site In §60.5430a Is Problematic And A New Definition For “Central Production Site” Is Needed**

The proposed definition of “well site” includes both a well pad and other sites with process equipment that receives produced fluids from wells. The definition is problematic in that it can be interpreted to mean that all well pads connected to a tank battery or other centralized station can be aggregated as part of a single well site. This is unprecedented and appears to be an attempt to aggregate sites that are not otherwise contiguous or adjacent but instead functionally interrelated. This could lead to conflict with the Source Determination rule leading to potential permitting questions subject to variable interpretations. In Source Determination, courts have ruled against functional interrelatedness. In effect, EPA is applying Option 2 from the Source Determination proposal to define a source in NSPS. **It is inappropriate to aggregate sites.**

This erroneous definition change is being made to support the misconception that hydraulic fracturing increases fugitive emissions and constitutes a modification. The modification issue is discussed in more detail below in Section 0. The practical result of this error is that EPA’s proposed definition of “well site” dissociates from the common sense and generally accepted and practically understood use of the term within industry. As well, tank batteries may or may not be tank batteries because of a false regulatory construct based on the activity at a distinctly separate surface site that has one or more wells. Additionally, the wellhead only exemption in paragraph (2) is rendered meaningless since aggregating separate surface sites into one means there will be no wellhead only well sites since wellhead only sites can produce to centralized tank batteries which would now be considered part of the wellhead only well site. EPA should instead consider a well site to be a distinct and separate surface site from a central processing site with no wellheads. The proposed definition change needs to be scrapped and either make no change to the original definition in Subpart OOOO or alternatively modify the definition as API recommends below in Section 27.2.12.

Another outfall of trying to define a well site other than in its generally accepted and common sense definition is that EPA assumes that any wellsite such as a wellhead only site produces to a central tank battery. This is not always true, there are other possibilities. A well could produce to a tank battery, a compressor station, or a tank battery combined with a compressor station, any of which may also happen to have one or more wells on the same surface site, making them well sites. Consequently, the collection of well sites that go to a central tank battery with no wells make the battery and the collection of well sites

an aggregated single well site. But, if the central tank battery happens to include an onsite well, it is a separate well site, not an aggregated well site. These various operating scenarios complicate determinations of well site as proposed when a definition includes sites with no wells. This argues for each separate surface site to be evaluated independently for modifications without attempted aggregation.

As described in the previous paragraph, there are multiple centralized site configurations which complicate the applicability requirements in paragraphs §60.5365a(i) and (j). While the previous paragraphs discussed the issues with the definition of a “well site”, a new definition is needed to more accurately account for centralized sites. For paragraph (j) API recommends the term “central production site” and “transmission compressor station” replace the use of the single term “compressor station”. A central production site properly defined encompasses central gathering and boosting compressor stations, tank batteries, and combination tank batteries and compressor stations that have no wellheads located on the same surface site. Central production sites are located between a well site and natural gas processing plant or transmission pipeline. The recommended definition is found below at the end of in Section 27.2.12.

#### **27.2.6 EPA Must Exclude Co-Located Midstream Assets From Well Sites**

In the final rule, EPA must clearly exclude co-located midstream assets from the fugitive emission monitoring program for well sites. As proposed, EPA’s broad definition of “well site” and “fugitive emission component” could be interpreted to subject midstream assets to fugitive emission monitoring requirements simply because they are located in geographic proximity to a production facility. Such an approach is inconsistent both with the way that the oil and natural gas sector operates and with the CAA. Upstream natural gas production and midstream gas gathering and processing are fully distinct and sequential portions of the natural gas sector supply chain. Appropriate clarifications and changes to the proposed rule need to be addressed so that co-located midstream assets are not inadvertently included in fugitive emission monitoring requirements designed for well sites.

Including co-located midstream assets in the fugitive emissions monitoring program for well sites is inappropriate for a number of reasons. First, equipment owned, operated, or leased by midstream operators is legally distinct from equipment owned, operated, or leased by upstream producers. Given their separate and distinct legal status EPA must establish separate requirements for upstream and midstream equipment. It is arbitrary and capricious to include some midstream assets in the fugitive emissions monitoring program simply because they are co-located within the footprint of a well pad site while excluding other midstream equipment that is located on a separate parcel of land.

API believes that the recommended definition changes discussed above in section 27.2.5 will partially help alleviate this problem. However, API recommends that EPA should also limit well site requirements to the equipment owned or operator by the well operator. API notes that more detail on this issue is provided in comments submitted by the Gas Processors Association (GPA), along with recommended regulatory text.

#### **27.2.7 Only Sites With Major Equipment (Such As Separator, Heater, or Glycol Dehydrator) Should Be Subject. The Proposed Requirement To Exempt Sites With Only Wellheads Is Not Adequate**

§60.5365a(i)(2) exempts well sites that only contain one or more wellheads. “(2) *A well site that only contains one or more wellheads is not an affected facility under this subpart.*” API agrees that a well site consisting only of wellheads should be exempt due to the small number of fugitive components. It would be overly burdensome with little gain in emission reductions to broadly require LDAR programs at sites without process equipment located at the well site.

Similarly, API believes that additional exemptions should apply. EPA’s Model Plants used in the TSD are based on the following assumed equipment and component counts.

Hydrocarbons are removed from the water prior to arriving at the injection well facility to avoid loss of revenue.

There is little to no environmental benefit in subjecting these injection well facilities to LDAR requirements and requiring additional resources which could be used for a better purpose. If EPA had considered the cost effectiveness of LDAR on injection well facilities, the results would show a net negative benefit. Therefore, injection well facilities should be excluded from the LDAR requirements. The recommended regulatory change for this exemption is provided in Section 27.2.12.

#### **27.2.10 The Definition Of Modification For Leak Detection Under §60.5365a(i)(3) Is Flawed For Both Well Sites And Compressor Stations.**

##### **Well Site Modification**

EPA has defined a modification for well site fugitives as follows in §60.5365a(i)(3)

*“For purposes of §60.5397a, a “modification” to a well site occurs when:*

- i. a new well is drilled at an existing well site;*
- ii. a well at an existing well site is hydraulically fractured; or*
- iii. a well at an existing well site is hydraulically refractured.”*

Increasing production by drilling a new well or hydraulically fracturing an existing well does not increase the probability of a leak from an individual component and no new components result from these activities, thus the potential emissions rate does not change. EPA appears to agree, as there is no demonstration in this proposal, the TSD, or RIA that shows increased fugitive emissions from higher pressures. EPA's estimate of emissions simply uses the accepted method of component count × AP-42 factor.

The increased emissions from hydraulic fracturing are accounted for in the requirements for control devices and closed vent systems for storage vessels. Potential changes in pressure from hydraulic fracturing would only be on the components for the well head because components from the well choke or separator help to regulate the line pressure to that of the gathering system. Furthermore, for safety reasons, the components at the well head and down the line are rated for higher pressures beyond what wells and gathering systems will operate, and an increase in the pressure alone would not inherently impact the emissions from those components.

##### **Compressor Station Modification**

EPA has defined “modification: for compressor stations in §60.5365a(j):

*For purposes of § 60.5397a, a “modification” to a compressor station occurs when:*  
*(1) A new compressor is constructed at an existing compressor station; or*  
*(2) A physical change is made to an existing compressor at a compressor station that increases the compression capacity of the compressor station.*

Here, EPA presumes that the addition of a new compressor at an existing compressor station would automatically increase the compressor station's emission rate and meet the definition of “modification”. This is very often not the case – an operator may install a new compressor at an existing site to replace one or more existing compressors, which may even reduce emissions. In addition, an increase in

compression capacity does not necessarily include a commensurate throughput and potential fugitive emission rate increase, it may simply be added for redundancy to increase operating reliability of the station. Throughput increases can also occur without increasing the number of compressors, if increases remain below the capacity of currently installed compressors.

Complicating matters, “new” means construction commenced after the proposal date. In this case construction refers to manufactured date. Since “new” compressors aren’t new because of when they are installed but rather when they are manufactured, “new” compressors may be relocated to other sites when no longer needed at current sites to save incurring capital costs of purchasing a newly manufactured compressor. This may also be a “new” or existing rental compressor if not expected to be on location long enough to justify a purchase of a new or existing compressor. Consequently, if a capital expenditure occurs, it will generally only be when the “new” compressor is initially installed. Relocating a “new” compressor from one site to another is often an expense, but not a capital expenditure. Paragraph 60.5397a(j)(1) is then based on a flawed premise to presume that a site modification has occurred. The “new” compressor may already be subject to Subpart OOOOa requirements, but was installed without incurring a capital expenditure. Coupled with situations for adding compression that do not incur an emissions increase as described in the previous paragraph, no modification occurs, and it is inappropriate to presume otherwise.

Similarly, presuming a physical change that increases compression capacity increases emissions is also flawed. Increasing capacity doesn’t necessarily mean an increase in throughput or an emissions increase in fugitive emissions. Capacity of one compressor may be increased so that another compressor can be permanently shutdown or relocated as part of a site optimization project which generally results in emissions decreases. In this case, a disincentive is presented in Subpart OOOOa by requiring a leak detection program for a project designed to decrease emissions, not increase.

#### Use of Modification in Other Rules

As with NSPS OOOO and NSPS KKK, it has historically been and should continue to be EPA’s intent that triggering NSPS through “modification” is in fact a difficult threshold to meet, not an easy one. Here, however, EPA’s proposed definition is overly inclusive and inappropriately relaxes the definition of modification.

The Clean Air Act Section 111(a)(4) defines a modification as follows - “The term ‘modification’ means any physical change in, or change in the method of operation of, a stationary source which **increases the amount of any air pollutant emitted** by such source or which **results in the emission of any air pollutant not previously emitted.**” [emphasis added]

Also §60.2 defines modification as: “Modification means any physical change in, or change in the method of operation of an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.”

The original definition of modification in §60.14 includes an increase in hourly emission rates. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.”

§60.14 require three important elements before an event qualifies as a “modification”:

- (1) a physical or operation change to an existing affected facility,
- (2) that results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies, and
- (3) for which a capital expenditure is required.

These elements establish the very high threshold necessary to demonstrate a modification has occurred, whereas EPA’s proposal undermines these long-standing principles.

§60.14(e)(2) states that “an increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility” is not a modification. EPA has defined in this rule the affected facility as a “well site” and the definition of a “well site” does not include the well bore or reservoir that is being fractured. “Well site means one or more areas that are directly disturbed during the drilling and subsequent operation of, or affected by, production facilities directly associated with any oil well, natural gas well, or injection well and its associated well pad. For the purposes of the fugitive emissions standards at §60.5397a, well site also includes tank batteries collecting crude oil, condensate, intermediate hydrocarbon liquids, or produced water from wells not located at the well site (e.g., centralized tank batteries).”

Hydraulic fracturing is not a capital expenditure for the well site as it does not involve physical changes or changes to the operation of existing surface equipment. It is the process of “fracturing” the reservoir. A new well bore is subsurface and not part of the “well site” which is a surface site. Therefore, EPA should not consider the addition of a new well or hydraulically fracturing an existing well a modification for a facility for the purposes of LDAR.

Furthermore, other NSPS for fugitives (e.g., VVa and GGGa) define the affected facility by the process unit and requires a capital expenditure to be a modification to the process unit. VVa defines the affected facility as “the group of all equipment within a process unit” (§60.480a(a)). Equipment is defined as “each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart (§60.481a).” VVa also states that “Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.” VVa defines capital expenditure differently too giving a much higher B value of 12.5 vs. 4.5.

GGGa defines the affected facility as (§60.590a(a)):

- (1) The provisions of this subpart apply to affected facilities in petroleum refineries.
- (2) A compressor is an affected facility.
- (3) The group of all the equipment (defined in §60.591a) within a process unit is an affected facility.

Under GGGa, equipment is defined as “Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.” (§60.591a) Process Unit is defined as “the components assembled and connected by pipes or ducts to process raw materials and to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482-1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.” (§60.591a) It states that “Addition or replacement of equipment (defined in §60.591a) for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.”

### **Recommendation**

EPA’s cost analysis was based on a model plant with certain component counts (554 for gas wells and 135 for oil wells). API recommends that the definition of modification be based on the addition of certain large equipment such as a separator, heater, or dehydrator, as used for the model plant count basis, to be consistent with the basis of the cost analysis and other fugitive rules. Furthermore, replacement of



existing equipment should not be considered a modification to the facility since it would not increase the component count which is what the cost estimate is based on.

#### **27.2.11 Components at Enhanced Oil Recovery Fields Must Be Exempted from the Fugitive Emissions Standards in Subpart OOOOa**

##### **Background on Enhanced Oil Recovery**

Crude oil development and production in U.S. oil reservoirs can include up to three distinct phases of recovery: primary, secondary, and tertiary recovery. During primary recovery, the natural pressure of the reservoir or gravity drive oil into the wellbore, combined with artificial lift techniques (such as pumps) which bring the oil to the surface. Secondary and tertiary recovery techniques, which are often referred to as Enhanced Oil Recovery, or EOR, extend a field's productive life generally by injecting water, gas, heat, or chemicals to displace oil and drive it to a production wellbore.

Examples of secondary EOR techniques includes water floods, and tertiary EOR techniques includes thermal recovery floods (e.g., steam), and gas injection floods (e.g., CO<sub>2</sub>). These EOR oil recovery techniques are used in oil fields to improve oil recovery after reservoir gas has been produced, and reservoir pressure and primary oil production are very low (e.g., no reservoir energy). In addition, the reservoir gas is artificially or mechanically changed with inert gases. Inert gases include nitrogen, hydrogen sulfide (H<sub>2</sub>S), and carbon dioxide (CO<sub>2</sub>). These inert gases may be required to be gathered and processed through specialty gas plants prior to sale. EOR is commonly found in older oil fields.

Water flooding is used to increase oil production by injecting a substantial amount of water into the oil reservoir rock voidage and increasing reservoir pressure. The injected water displaces the oil and carries the fluids to production wells. Water to oil ratios can be greater than 90%. In some EOR water floods, H<sub>2</sub>S and other inert gases are generated in the reservoir. As a result, surface production equipment (i.e., plant) must be designed to handle high volumes of water and 3-phase fluids, and contain the potential "sour" and inert/contaminated gases for personnel safety reasons.

Thermal flooding is used to improve heavy oil recovery by injecting steam into the oil reservoir. Heavy oil has low viscosity, gas to oil ratio (GOR), and typically an API Gravity <18. The steam increases the heavy oil temperature reducing the viscosity allowing the oil to be produced from the well via artificial lift. The thermal surface equipment is designed to manage high volumes of water, heat the water, inject the steam, produce the hot oil, generally 2-phase separation of the fluids, and contain the low volumes of potential "sour" and contaminated gases for personnel safety reasons. Steam floods can generate substantial concentrations of hydrogen sulfide.

Gas injection (CO<sub>2</sub>) flooding is used to improve oil recovery by injecting a miscible gas and water into the oil reservoir. The miscible gas, water, and increased reservoir pressure improves oil recovery and fluid sweep. Gas and water are injected into wells and the oil, water, and contaminated inert gas is recovered from production wells. The surface equipment is designed to manage high volumes of water, high pressure gas (e.g., CO<sub>2</sub> as a liquid), injection system, production/gathering system for the multi-phase liquids, high and low pressure separation of the fluids, and greater than 30% inert and potential "sour" gases. Due to the displacement characteristics of CO<sub>2</sub> and Immediately Dangerous to Life or Health (IDLH) for H<sub>2</sub>S, the surface equipment is designed for personnel and public safety reasons.

EOR Gas Gathering Systems and Plants are designed to transport and process the volumes and EOR recovered gases that include CO<sub>2</sub>, N<sub>2</sub> and H<sub>2</sub>S.

##### **EPA Did Not Consider EOR Operations in Their Rulemaking**

Oil production fields that utilize EOR have very different gas stream compositions and characteristics from the types of operations that EPA evaluated in the development of the proposed NSPS subpart OOOOa (and the CTG). These differences have a significant impact on the VOC and methane emissions. EPA's model plants and representative gas compositions used to evaluate the impacts that drove the

**CERTIFICATE OF SERVICE**

I hereby certify that on this 20th day of June, 2017, I have served the foregoing Reply to Responses in Opposition to Emergency Motion for a Stay or, in the Alternative, Summary Vacatur, and Attachments on all parties through the Court's electronic filing (ECF) system.

DATED: June 20, 2017

/s/ Susannah L. Weaver  
Susannah L. Weaver

Message

---

**From:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]  
**Sent:** 8/4/2017 9:08:37 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]  
**Subject:** Fwd: Oil and Natural Gas NODA  
**Attachments:** EO12866\_Oil and Gas Stay NODA 2060-AT59 Preamble\_20170802.docx; ATT00001.htm; EO12866\_Oil and Gas Stay NODA 2060-AT59 Economics Memo\_20170802.docx; ATT00002.htm; Action Memo.docx; ATT00003.htm; OMB Transmittal Memov2.docx; ATT00004.htm

Drafts attached. Sam, to catch you up, I just chatted with Brittany briefly and she'll forward on the draft notice to Aaron (and whoever else at OMB).

Not all the attachments are necessary to send to OMB, just the main draft. The action memo is meant to be internal, just want y'all to have all that I have at this time.

Let me know if any questions.

Hope y'all have a great weekend!  
Mandy

Sent from my iPhone

Begin forwarded message:

**From:** "Lewis, Josh" <Lewis.Josh@epa.gov>  
**Date:** August 3, 2017 at 2:04:42 PM PDT  
**To:** "Gunasekara, Mandy" <Gunasekara.Mandy@epa.gov>  
**Cc:** "Dunham, Sarah" <Dunham.Sarah@epa.gov>  
**Subject:** FW: Oil and Natural Gas NODA

Mandy,

Attached are the oil and gas NODA and supporting materials we received in the OAR immediate office today. We are reviewing now and will move them forward in the process tomorrow. My understanding is this version has been reviewed and ok'd by Justin and others in OGC. If you have edits we can incorporate before moving the package to OP.

Josh

Message

---

**From:** Schwab, Justin [schwab.justin@epa.gov]  
**Sent:** 8/31/2017 5:17:42 PM  
**To:** Bolen, Brittany [bolen.brittany@epa.gov]  
**CC:** Dravis, Samantha [dravis.samantha@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]  
**Subject:** Fwd: TX  
**Attachments:** TX BART trading program FRN final action draft for concurrence.docx; ATT00001.htm

Brittany, to respond to your request for the table, attached is the draft FIP that Mandy and I have been reviewing - the table to which I referred should be on page 22 (captioned something like "Texas EGUs subject to SO2 trading FIP.")

I will forward the updated table when I receive it.

Sent from my iPhone

Begin forwarded message:

**From:** "Coleman, Sam" <Coleman.Sam@epa.gov>  
**Date:** August 25, 2017 at 11:08:21 AM EDT  
**To:** "Gunasekara, Mandy" <Gunasekara.Mandy@epa.gov>  
**Cc:** "Schwab, Justin" <schwab.justin@epa.gov>  
**Subject:** RE: TX

We are also working on the Response to Comments.

Samuel Coleman, P.E.  
Deputy Regional Administrator  
EPA Region 6  
[coleman.sam@epa.gov](mailto:coleman.sam@epa.gov)  
214.665.2100 Ofc  
214.665.3110 Direct  

Personal Phone / Ex. 6

 Cell

-----Original Message-----

From: Gunasekara, Mandy  
Sent: Thursday, August 24, 2017 8:26 PM  
To: Coleman, Sam <Coleman.Sam@epa.gov>  
Cc: Schwab, Justin <schwab.justin@epa.gov>  
Subject: TX

Hi Sam,

Can you please send me the latest version of the Texas regional Haze FIP?

Best,  
Mandy

Sent from my iPhone

Message

---

**From:** Hengst, Benjamin [Hengst.Benjamin@epa.gov]  
**Sent:** 6/22/2017 6:45:35 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]  
**CC:** Grundler, Christopher [grundler.christopher@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Rees, Sarah [rees.sarah@epa.gov]; McGartland, Al [McGartland.Al@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]  
**Subject:** Redline version of the 2018 RVO proposal  
**Attachments:** RFS 2018 Annual Rule Draft NPRM 6.22.17 Clean 2pm.docx; RFS 2018 Annual Rule Draft NPRM 6.22.17 RLSD 2pm.docx

Hi Mandy:

Attached are redline and clean versions of the proposed volume rule. The redline shows changes compared to the version that was signed off upon by OMB last week. This document:

# Deliberative Process / Ex. 5

Our plan is to send this to OMB **tomorrow morning at 9am unless you ask us to hold it**. Please note that this step is not uploading the package for clearance—this is just one more pass-back document for them to review. OMB has confirmed that they will circulate this for interagency review once again. Only after their interagency review process is complete would OMB ask us to upload the final document for formal clearance.

Please let me know if you have any questions. Thanks, Ben

Message

---

**From:** Greaves, Holly [greaves.holly@epa.gov]  
**Sent:** 7/7/2017 4:05:46 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Brown, Byron [brown.byron@epa.gov]; Greenwalt, Sarah [greenwalt.sarah@epa.gov]; Forsgren, Lee [Forsgren.Lee@epa.gov]; Beck, Nancy [Beck.Nancy@epa.gov]; Yamada, Richard (Yujiro) [yamada.richard@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bowman, Liz [Bowman.Liz@epa.gov]; Lyons, Troy [lyons.troy@epa.gov]; Traylor, Patrick [traylor.patrick@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; Ford, Hayley [ford.hayley@epa.gov]  
**CC:** Jackson, Ryan [jackson.ryan@epa.gov]  
**Subject:** QFRs from House Budget Hearing - your help needed  
**Attachments:** HAC QFRs with RESPONSES FOR HOLLY\_consolidatedv2.docx

Attached please find the QFRs with responses prepared (primarily) by career staff. The office responsible for each response is highlighted in green. You can use the "control+F" function to search through the document for the acronyms for each office.

Can you each please review the responses for your office (see assignments below) and reply back to me with any edits necessary? Please send your edits in tracked changes by Noon on Tuesday, July 11<sup>th</sup>.

Note, if you have already reviewed the responses prepared by your career staff, please simply respond that your review is complete – however, please double check that you have seen responses for all the questions allocated to you.

**Assignments**

- OAR – Mandy
- OLEM – Byron
- OW – Lee
- OITA - Sarah
- ORD – Richard
- OP – Brittany
- OA/OPA – Liz
- OCIR – Troy
- OECA – Patrick
- OCSPP – Nancy
- OGC – Justin/David
- OARM/Office of Budget - Holly

Thanks,  
Holly

Message

---

**From:** Greaves, Holly [greaves.holly@epa.gov]  
**Sent:** 6/20/2017 9:27:03 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Greenwalt, Sarah [greenwalt.sarah@epa.gov]; Brown, Byron [brown.byron@epa.gov]; Beck, Nancy [Beck.Nancy@epa.gov]; Fotouhi, David [fotouhi.david@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]  
**CC:** Lyons, Troy [lyons.troy@epa.gov]; Bowman, Liz [Bowman.Liz@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]  
**Subject:** Prep for Senate Hearing  
**Attachments:** BLUE BOOK, Big Book.zip; New Source Performance Standards Wood Stoves.docx; 2015 Delay Implementation of the 2015 Ozone Standards.docx; METHANE OIL AND GAS RULE.docx; War on Coal.docx; California Waiver.docx

Good afternoon,

We currently have time blocked on the Administrator's schedule Thursday morning and Monday (all day) for hearing prep. Below are the list of topics, crosswalked to the fact sheet in the big book with the blue cover, that OCIR has identified as relevant to the committee members.

Please be prepared to brief the Administrator on the subjects in your area of responsibility (i.e. air, water, land, chemicals). We will be sensitive to everyone's schedule and try to call you to his office only when you are needed, as we did last week.

Note – there were new fact sheets created for the blue books and if you are missing a page referenced in the list below, please refer to the soft copies, attached.

Thanks,  
Holly

**Deliberative Process / Ex. 5**

# **Deliberative Process / Ex. 5**



Message

---

**From:** Lyons, Troy [lyons.troy@epa.gov]  
**Sent:** 5/30/2017 11:49:02 PM  
**To:** Jackson, Ryan [jackson.ryan@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Brown, Byron [brown.byron@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Greenwalt, Sarah [greenwalt.sarah@epa.gov]; Ringel, Aaron [ringel.aaron@epa.gov]; Palich, Christian [palich.christian@epa.gov]; Bennett, Tate [Bennett.Tate@epa.gov]  
**CC:** Greaves, Holly [greaves.holly@epa.gov]; Bowman, Liz [Bowman.Liz@epa.gov]; Fotouhi, David [fotouhi.david@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; Shimmin, Kaitlyn [shimmin.kaitlyn@epa.gov]; Beck, Nancy [Beck.Nancy@epa.gov]  
**Subject:** Budget Mock Hearing--Thursday, June 1 @ 2:30  
**Attachments:** FINAL House Interior Appropriations Bios.docx; House Interior Appropriations Q&A.DOCX; House Interior Appropriations Q&A SHORT.docx

**Importance:** High  
**Flag:** Follow up

Thank you for volunteering to participate in the mock hearing with the Administrator in preparation for his testimony before the House Interior Approps Subcommittee. Given the changes to the schedule, the mock hearing is scheduled for **THURSDAY, JUNE 1** in Administrator Pruitt's office.

Attached you will find several documents which should help with the facilitation of the mock hearing—it was a joint effort to assemble these documents, so I appreciate everyone's help.

1. Biographies—each biography includes questions/topics that each Member may ask.
2. Q&A—OCIR and OCFO have researched the likely topics and put the likely questions in narrative form along with the questions. This should serve as the “script” for the mock hearing.
3. Q&A Short Version—this is a more condensed version of the Q&A without the lengthy narrative.

Below are the assignments for the mock hearing. Please take a look and let me know if you have any questions or wish to discuss further.

Majority

|                                  |                  |
|----------------------------------|------------------|
| Chairman Ken Calvert (R-CA)      | Ryan Jackson     |
| Congressman Mike Simpson (R-ID)  | Aaron Ringel     |
| Congressman Tom Cole (R-OK)      | Sarah Greenwalt  |
| Congressman David Joyce (R-OH)   | Christian Palich |
| Congressman Chris Stewart (R-UT) | Aaron Ringel     |
| Congressman Mark Amodei (R-NV)   | NA               |
| Congressman Evan Jenkins (R-WV)  | Tate Bennett     |

Minority

|                                      |                  |
|--------------------------------------|------------------|
| Ranking Member Betty McCollum (D-MN) | Byron Brown      |
| Congressman Chellie Pingree (D-ME)   | Samantha Dravis  |
| Congressman Derek Kilmer (D-WA)      | Mandy Gunasekara |
| Congressman Marcy Kaptur (D-OH)      | Brittany Bolen   |

Ideally the mock hearing should last no longer than two hours, to simulate the hearing.

Message

---

**From:** Greaves, Holly [greaves.holly@epa.gov]  
**Sent:** 5/23/2017 9:58:55 PM  
**To:** Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Greenwalt, Sarah [greenwalt.sarah@epa.gov]; Lyons, Troy [lyons.troy@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Dravis, Samantha [dravis.samantha@epa.gov]  
**Subject:** Budget factsheets  
**Attachments:** Factsheet.zip

Please see attached for soft copies of the factsheets each office prepared to include in the budget prep binder.

These have not been edited.

By tomorrow, please let me know 1) what fact sheets are missing, and I will work with the programs to get something started, and 2) for Mandy and Sarah only – please make your edits to the talking points as we discussed.

Thanks so much for your help!

Holly